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BULLETIN OF THE

TAYLOR SOCIETY

AN INTERNATIONAL SOCIETY TO PROMOTE THE SCIENCE
AND THE ART OF ADMINISTRATION AND OF MANAGEMENT

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Featuring

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Engineering Societies Building
29 W. Thirty-Ninth St.
New York

OCTOBER, 1926 VOL. XI, NO. 4

Objects of the Taylor Society, Incorporated

The objects of this Society are, through research, discussion, publication and other appropriate means:

1. To secure—for the common benefit of the community, the worker, the manager and the employer—understanding and intelligent direction of the principles of administration and management which govern organized effort for accomplishing industrial and other social purposes.

2. To secure the gradual elimination of unnecessary effort and of unduly burdensome toil in the accomplishment of the work of the world.

3. To promote the scientific study and teaching of the principles governing organized effort, and of the mechanisms of their adaptation and application under varying and changing conditions.

4. To promote general recognition of the fact that the evaluation and application of these principles and mechanisms are the mutual concern of the community, the worker, the manager and the employer.

5. To inspire in labor, manager and employer a constant adherence to the highest ethical conception of their individual and collective responsibility.

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The membership of the Society comprises Members, Junior Members, Fellows, Honorary Members, Life Members, Firm Members, Contributing Members and Student Associates. Application for membership should be made on a regular form which may be secured from the Society. New members may be elected directly to the grades marked*.

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All dues are payable in advance, either annually or in semi-annual installments. The fiscal year is November 1 to October 31. Members elected other than at the beginning of the fiscal year are charged pro rata (quarterly) for the first year.

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Bulletins Wanted

The Library of the American Federation of Labor in Washington is trying to secure and bind a complete set of the *Bulletin of the Taylor Society*. Back numbers have been provided, with the exception of the following issues:

Volume III, Numbers 3, 4, 5, 6 (1917)
Volume IV, Number 5 (1919)
Volume VII, Number 5 (1922)

Will some member who has these issues kindly make them available for this purpose?

Comment

THE outstanding problem of administration and management of which industry has become conscious during 1926, is that presented by current, or hand-to-mouth, buying. Our readers will recall the attention attracted by an article on that subject in the September 4 issue of the *Saturday Evening Post*, by President Grace of the Bethlehem Steel Company. More recently there has come to our attention an informing and suggestive pamphlet, published by The Farmers Loan and Trust Company, New York, which presents the views of thirty-nine prominent authorities—executives in various lines of enterprise and economists. These authorities are in agreement that the new buying habits are likely to last for a considerable period, or even become permanent, and that they will have profound influence on administrative policy and managerial practices.

A PRECISE statement of the influences which generated these new buying habits must await careful investigation, but that investigation would probably discover the following sequence of events to be significant: increase of productive capacity by European war demand between 1914 and 1917; further increase of productive capacity by American demand following our entry into the war; still further increase of productive capacity during the inflation years 1919 and 1920; loaded warehouses and retail merchants' shelves; sudden cessation of consumer demand in late 1920 and 1921; a buyers' market; the depression and anxiety of distributors over the clearing of warehouses and shelves; fear of falling prices; resumption of buying by retailers with great caution, characterized by current as against forward orders, small lots as against large lots, and by efforts to speed up turnover.

ESTABLISHMENT of the current buying habit was promoted by the great increase in production facilities to which we have referred, by the remarkable improvements in transportation service—railroad and motor—during the period following the war, and—far from being least important—by noteworthy improvement in merchandising management, especially in department stores and in chain stores. According to Mr. Jesse I. Strauss, President of R. H. Macy & Company, "since 1920 merchandise stock control, unit system of stock keeping and turnover have been the watchwords in the retail industry." Mr.

Victor W. Sincere, President of the National Department Stores, Inc., informs us that "there has been an increase in the cost of operation (of department stores) . . . from 1920 up to the present time of from 27.2 per cent to 30.4 per cent. This increase, coupled with the fact that the gross profit mark-up on merchandise has declined a fraction of a per cent, and at the same time the mark-down or reductions of merchandise have been constantly on the increase due to closer competition, has compelled the retailer to adopt a more scientific method of operation to secure a profit . . . the real reason for the present buying methods . . ."

IN other words, just as under pressure of necessity in an earlier period manufacturing was compelled to discover, or devise, and to adopt scientific management, likewise under pressure of necessity during this more recent period retail merchandising has been compelled to adopt and adapt the same principles and practices of management. The technique of fabrication had out-stripped the technique of distribution; now the technique of *retail* distribution has caught up or nearly caught up with that of production, with such far-reaching consequences as to raise new problems—and possibly the necessity of new policies and new elements of technique—in fabrication, manufacturers' distribution and jobbers' distribution.

PROVIDED, of course, that the current buying habit of the retailer continues. The retailer gets his cue from consumer buying habits, and from this cue constructs a policy modified by his judgment of the permanence of consumer habits and the possibilities of his own managerial technique. It is impossible to prove, or even to forecast, what will be the conditions ten, fifteen or twenty years hence; but it is the empirical judgments of the thirty-nine contributors to The Farmers Loan and Trust pamphlet that, in the conservative words of Professor Taussig, "the changes in the practices of retailers and other distributors seem to me due partly to temporary causes, partly to permanent . . . . . my guess is that the permanent causes will prevent large-order buying from being as considerable as it once was, and will make hand-to-mouth buying more common and representative." No matter what reversion to old habits there may be in 1935 or 1940, manufacturers and jobbers would be wise to reexamine their policies and methods now, and determine what modifications are essential to survival during the next ten years.

WHAT, from our perspective of today, appear to be the consequences of the habit of current, small-order buying, and what influence is it likely to have on policy and on methods of the manufacturer and the jobber? We cannot give the answer, but we can break these major questions into secondary questions which, when we get together at the December meeting, we can discuss at a session to be arranged for that purpose.

It seems to be generally agreed that the principal consequence will be to transfer from the retailer to the manufacturer (and perhaps in some instances to the jobber) the risk of large investment in available stocks. Consequent upon this, the manufacturer will have to meet the major problem of high costs of interest, depreciation and processing, by lines, and the retailer will have to meet the major problem of avoidance of shortages of stock, by lines. From the point of view of industrial organization, may this not bring about new integrations, for purposes of distribution, such as, on the one hand, between manufacturer, manufacturer's branch (with warehouse) and retailer, or, on the other hand, between manufacturer, jobber and retailer?

May not such an integration with its community of interest compel the development of a radically new technique of inter-firm operation, similar to, in fact identical with, scientific management inter-departmental operation, for the purpose of avoiding the manufacturer's and the retailer's risks to which we have referred; a technique involving precise *joint control* with its mechanisms of joint forecasting, joint budgeting, joint apportionment of stocks, and joint standardization of staples and of handling non-staples?

From the point of view of the manufacturer may not this situation put him more squarely on a straight conversion basis and compel a more scientific management of processing than any of which he has yet dreamed; a more precise control all along the line, from planning and purchasing through the sequence of processes to packing and delivering? Will he not be faced with the problem of handling repetitive orders for relatively small quantities per order without sacrificing the advantages he has secured in developing large scale production and without increasing costs?

There is strong probability that many enterprises which have in the past manifested indifference to scientific management will come to acknowledge that after all that form of management offers the only means of solving these problems.

"Top Control"[1]

Ways and Means of Making Managerial Policies Effective

By **JOHN H. WILLIAMS**
Consulting Engineer, New York

I DO not like the wording of the topic assigned to me—the connotations are psychologically bad. Yet I must confess that I have searched in vain for a more suitable short-cut expression to make unnecessary the use of some ponderous phrase which would in advance kill interest in the subject. Therefore let us go ahead with understanding that "top" connotes general administrative responsibility as distinguished from responsibility for details, and "control" connotes observance of the law of the situation established by policies which have been adopted. *Top control refers to the policies of the administration, its means of making them effective and its means of judging their effectiveness.*

Under this interpretation it will obviously be difficult to consider the control function separate from the personalities of the executives and the environment in which control is exercised; and I do not know that I shall try to do so, because the same methods in different hands and under different environments bring different results, and in effect become different methods. This is the crux of much of the misunderstanding of scientific management, and is the cause of much of the controversy with reference to human relations not only in business but in all branches of life as well.

Although undoubtedly there is a one best way for a particular person under particular conditions, there is no one best way applicable to all people under all conditions. That we may better understand the complexity of top control, I am first going to consider some of the conditions under which it may be called upon to function. There are to be considered: the character and size of the enterprise; the background and personality of the chief executive; the present practises and the state of the art of the enterprise; and the environment under which the control must function.

The Character and Size of the Enterprise

Various characteristics and differences in size affect the type of control best suited to a situation. Manufacturing needs the maximum of standardization and mechanism, with personality a lesser factor. Merchandising or service operations reverse the situation. You cannot standardize them to any considerable extent, and you cannot make them mechanistic. The outstanding things in merchandising and service are personality and expediency.

In manufacturing, a jobbing business, such as printing or general contracting, offers the most difficult situation. Here is a maximum of complexity and need for constant supervision. Less personality and more standardization and mechanism are required in a repetitive plant, such as a shoe factory where the same thing is done over and over again. In a repetitive plant it pays to spend almost unlimited money to perfect any one phase of an operation. With an operation going into millions and millions of repetitions, a microscopic saving becomes very important. These repetitive operations offer opportunity for motion picture analysis and all sorts of intensive studies that would be fantastically extravagant in a jobbing plant.

A business may involve continuous processing such as milling. This offers the same problem as in the repetitive plant. The first time it is set up it is something new and justifies efforts for perfection in detail. But once set going, a continuous process becomes largely a question of inspection. Of course there must be constant research and study to keep abreast of the times, but so far as control of the plant is concerned, it is largely a matter of inspection and records.

Manufacturing then includes a variety of conditions requiring different methods of top control.

Another important factor is the number of executives involved. By executive I mean someone whose decisions and acts may have an indirect effect upon others than those working immediately under him.

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[1] Abstract of an address at a meeting of the Eastern Massachusetts Section of the Taylor Society, with the cooperation of the parent society, Cambridge, Mass., May 7, 1926.

Coordination of such persons is essential to any sort of control. Coordination of three executives is a simple matter, but where there are one hundred or more it becomes difficult and complicated if one is to avoid "red tape," for we must never forget that *any methods which go beyond those necessary to convey instruction, augment memory and keep all executives informed as to acts of other executives which may affect them, are red tape.*

The Background and Personality of the Chief Executive

Failure to recognize the background and personality of the chief executive is probably one of the principal causes of trouble in making controls function effectively. Those of us who have studied questions of management and method in the abstract are always in some danger of overstressing rational methods. A rational method is worthless unless the executive happens to be of the type who can properly use that particular method. It is vastly better not to have so much method if a man is not going to use it, than to have too much of even the best methods. Methods, in other words, must be set up according to the background and personality of the individual who is to exercise them.

If a chief executive develops from the selling end of the business he is almost certain to be of a very different type from a graduate of the production end. I know of a case where the chief executive came out of the sales end of the business. The business *happened* to be largely dependent upon selling and he *happened* to have a good production man. He has made a wonderful success and a national reputation. A chief executive in another industry came out of the selling end, but the business *happened* to be one where the production end was all important and very difficult. He did not *happen* to have a good production man, and he has not made much of a reputation; he has had awfully hard plugging. I cannot see that one of these men is particularly better than the other. They both had the same background. In one case this background fitted into the job, and in the other it caused him to deprecate the very things most necessary to the success of the business.

The temperament of the chief executive is another important element. Is it such as to predispose him to lead or to dominate? This makes a tremendous difference. Never try to give methods that require domination to a born leader—that would be fatal; but be sure to give these methods to one who is not a born leader.

I am discussing this subject from the point of view of trying to help an existing situation, because my experience is along this line. I have never had the opportunity to select the man and create the methods for a new enterprise. Most industrial problems are with reference to an existing enterprise and involve personalities which are inseparable from it.

There are so many shades and degrees of temperament that it is hopeless to consider them unless we take the extremes. There are at least three clearly definable extremes:

There is the *inventor* type. The chief executives of most of our largest industries were of this type during their early stages. They created the idea out of which the industry developed and nursed it through its immaturity. They often possess to some extent all the best qualities for an executive, but in the end are dominated by their imagination. They usually lack stability, and, more often than otherwise, this is their undoing as the industry matures and becomes susceptible to a more mechanistic and rational type of management. We owe to this type most of the great industrial achievements of today, but the very qualities which make it possible for them to succeed in the early stages of an industry are the identical qualities which are their undoing when the industry matures.

Another type is the *leader*. He is very much like the inventor type, but without his faculty for invention and his instability. He seldom creates in the sense that the inventor does, but he often leads others to do so and is a good coordinator. Seemingly at least he is an idealist and usually is of an attractive personality.

Then there is the *true executive* type. He is seldom brilliant, usually conservative, has a good memory, is well-informed, a hard worker and systematic. He has more head than heart and is most effective as the head of an already well-established undertaking

Obviously these three types cannot be expected to achieve the best results with the same methods of top control.

Present Practices and the State of the Art of the Enterprise

Members of the Taylor Society, especially the older group of us, should let our minds run back to what Taylor went through in establishing time studies, routing and what are generally known as the Taylor methods. It will make us realize what we are undertaking when we go far beyond the usages of the industry in which we are working.

My first mature interest in psychology was 'roused at a meeting of a little group who used to dine together and listen to each other's ideas. The fellow who was talking that night was a psychologist at Columbia. He took a piece of stiff paper and folded it and said, "Do you see that piece of paper? It does not stay folded. I folded it, but it does not stay." He creased it with his thumb nail and said, "Now it will stay folded. I hurt it."

We must never forget, in dealing with human beings, that some hurt is usually involved in change. We upset acquired habits which in time have taken on a quality like protective coloring. They comfort and protect us. The present practises of an art or an enterprise have a tremendous tenacity. Undertaking to change them is a big problem. If we attempt to change too rapidly or too definitely, we shall defeat our own ends.

Mr. Taylor virtually gave his life to changing management methods quickly, in one man's lifetime. He conceived the idea of the application of the scientific method to industry and made the sacrifice necessary to bring about an almost complete revolution in methods of management within one lifetime. He did a wonderful job and that is why we all feel as we do about him. I doubt if many of us have the personality or the character or, I will even say, the wish to make the sacrifices that Mr. Taylor made. If you do not want to make that sacrifice, if you do not want to run the risk of failing, do not try to go as far or as fast as he did. Existing conditions are one of the biggest factors in determining the most effective ways and means of top control.

I used to be terribly—what shall I say—academic with reference to methods of management. If a client would not do what I wanted, and would not let me give him my best, I would not give him anything. What I will give a man now would have been shocking to me then. Provided he can function with it and it stimulates him to *constructive* effort, I will give him almost anything and go away feeling fine, feeling that I have done a good job. I used to strive too hard for what was rationally best. I imagine most of the older men interested in scientific management have done this. I should feel sorry if you younger men were to have less high standards than we had, but your standards must be adapted to the requirements of human nature. One must not try to give too much of one's self or to go too fast.

Some years ago I devised a method of visualizing management. I worked terribly hard on it—most Sundays and many nights for several years — and finally got something that worked. I showed it to some of my good friends; I wrote letters telling them how fine it was, and what a wonderful thing I had done, but I never got a peep out of them in the way of encouragement. They said the most shocking things. I was hurt all over. I knew it was good, but I could not sell it.

About that time I needed another assistant. A young man—C. L. Barnum, whom most of you know—applied for the job. I do not know where he got it, but he seemed to have a fine opinion of me, and he was willing to work for me very reasonably. I do not know why he did that, but he said he wanted breadth of experience. When I gave him the job I thought of my method of visualization. I said to myself, "Here is a Cornell man, an honor man, who not only took engineering, but also general science. He has the desired education and environment. If I cannot put this thing over with Barnum, it really must be no good."

After he got used to things I said, "Barnum, I want you to make a study of such and such a situation and see what we can do with it. The way we handle a matter of this kind is to visualize the present method of operating; then with that before us, we study the old method and make a visualization of what should be substituted in its place." Then I told him all about my method of visualization and gave him the same sheets of paper that my good friends were unable to use. I did not tell him I had devised the method and that I could not get my friends to use it. Two or three days later he brought me a visualization of things as they existed. We discussed it and he walked off, and a couple of days later he came back with the visualization of how it should be. You see Barnum has no prejudices or habits to overcome. He was expecting to get something new and he got it. Not knowing how new it was, he had no prejudice against it. When you undertake to change old established practices in an industry, the conditions are exactly the reverse and unless you are very careful your results will be just as exactly reverse. It is easier to learn something entirely new than a new way of doing something one already has a fixed way of doing. It is harder to do something in a way it has never been done before than in the commonly accepted way. Do not forget that existing methods, however poor they may be, have the advantage of being accepted.

The Environment Under Which the Control Must Function

What do I mean by environment? While environment includes physical surroundings, I have principally in mind at this moment the degree of harmony or conflict in the attitude of mind of the various groups concerned. In this connection let me consider changes that have taken place in the last twenty or thirty years.

At the beginning of this century business was largely an individual affair. There were few corporations. Sons succeeded fathers; "and Son" or "Brothers" constituted the ending of a fair majority of firm names. "Marrying a business" was a common expression. In fact, business still bore the earmarks of its origin in the family. Labor turnover, both in office and factory, was negligible.

Today business is largely impersonal. It is done mostly through corporations. Small businesses are rapidly disappearing, being consolidated. Business is today owned by tens of thousands of impersonal stockholders, who are unknown to the managers, and managed by non-stockholding, salaried executives unknown to all but a few of the stockholders.

Another change in environment rises from changes in family and home life. In the old days, the family was usually large. In our family we rarely sat down with less than twelve at table, and often there were fifteen or eighteen. Everyone kept open house, so to speak. If we had seen just two persons living together alone in those days, we would have thought there was something queer about it.

Space was plentiful. There were always several spare rooms. The standard of living was simple, as compared with today, and social and economic conditions were easy. One or two more or less in the household did not mean much in terms of money. The older members of the family were always welcome, and there was always something for them to do.

Consider the contrast today: Family small, space scarce, standard of living complicated, social and economic conditions hard. Go anywhere and see the big houses being torn down. People cannot afford and do not want to live in them. Young people today do not seem to like the big family idea. If they have a spare room, they want it for their friends. Where the old folks used to be the principal factor in the family, today they are merely tolerated.

Consider the spread of education. In the old days, an educated laboring man was the exception. The rudiments of economics were unknown not only among laborers, but among the white collar class. Today everyone has some schooling, and the percentage of those of college education has increased enormously. Economics furnishes the headlines in our daily newspapers. The New York radio announces stock market closings from eight or ten stations. Ordinary laborers discuss supply and demand and some even the law of diminishing returns.

Yesterday the laborer looked forward to a steady job at good pay, and that was all. The white collar man looked forward to ownership of a business, partnership in a firm, or some position of responsibility that would distinguish him a little from the rest of the world. Today there is no distinction between classes except in the so called smart set and to those of us who are not in it there does not seem to be much there. The laborer's son and the son of the big business man have an equal chance to sink or swim. Labor and the white collar class have merged. Today all classes look forward with much the same hopes and fears.

You may ask, "What have all these changes in environmental conditions to do with top control?" They mean a lot. They have changed what the employer and employee see in and expect of each other. They have created a need for the older generation to adjust itself to new conditions at the time of life when it is hardest to make adjustments, and, on the other hand, a need for the younger generation to put up with standards and exactions from business superiors for which they can see no reason or necessity. Common ideals and standards and objectives are the essence of effective control, and everything which tends to exaggerate differences in environment of the various groups of which industry is composed tends to make control more difficult.

Psychology of the Word Control

In the light of what I have said about conditions of top control, I want to refer again to a point I made briefly at the outset. The use of the word control is highly undesirable. No matter what use necessity compels us to make of the word in discussion let me advise you under no conditions to use the word in that immediate environment in which the machinery of control is developed and operated. Unquestionably harmless as we conceive it, it nevertheless suggests restraint and limitation, is repugnant to many people physically and psychologically, and creates avoidable obstacles to the successful working of the control methods.

Dr. Watson a few years ago conducted experiments on babies in the maternity ward of the Johns Hopkins hospital. It was arranged that the babies should be protected against ordinary environmental conditions so as to protect them against parental and home influences. The idea was to find out what a human being is like before it becomes prejudiced by its elders. He found there are three major characteristics of the child before it is in any way contaminated, and one of these is dislike of physical restraint, which is merely another word for control. The moment the babies' movements were restrained or interfered with they cried and showed anger.

When I was in Washington during the war we had a department called "Materials Control." Its function was to control the distribution of materials. We had nothing but trouble with it. After careful analysis of the troubles we decided to change the name to "Records Department" and we never had any more trouble. The only real change we made was to send the facts with reference to materials to the various divisions and ask them to bring about certain results, whereas formerly, without sending them records, we sent them instructions what to do.

You cannot control, in the generally accepted meaning of the word, in this day without doing more harm than good, and you might as well face this fact. You can, on the other hand, give people facts and ask them to work to certain ends, and even prescribe methods to be followed, provided you explain that the methods are given them to insure the necessary coordination with other departments. Apparently we never lose that dislike of arbitrary control which Dr. Watson's babies evidenced.

The Methods of Top Control

The principal methods through which general administrative control is effected in the ordinary organization are:

1. General accounting—that is, records with reference to purchases, sales, receipts, disbursements, profits and losses.
2. Estimating—that is, price fixing.
3. Cost accounting—that is, cost finding.
4. Budgeting—that is, policy determination, allocation, comparison of accomplishments with forecasts.
5. Interpretation—of the progress of the going concern in terms of causes and effects.

Who Shall Establish Control Methods?

Control consists of a group of methods which give information to executives, on the basis of which executives make decisions of one kind or another. I am strongly of the opinion that the function of *determining methods of doing things* and the function of *making decisions* should not be performed by the same person. If they are, the function of determining methods will be continually subjected to interruptions by the function of making decisions. The executive who is called upon to make decisions is continually subject to interruptions and must be continually adopting expediences which are inconsistent with careful and unbiased study of situations and laying out of well-balanced methods.

While the methods man must have no responsibility for the doing of things, he must necessarily have full authority and responsibility with reference to means of recording such as the accounting classification. Any executive responsibility, in the ordinary sense of the word, will unavoidably involve him in results achieved and so bias his judgment. His presence should not be necessary at any given time to any phase of the operation of the industry; he should be free to devote his undivided attention to problems, one at a time, and so be saved from hurried or immature judgments. The function of an operating executive, on the other hand, should be to make decisions and to engage in constant study of different policies in their effect upon results, and in the development of a common understanding throughout the personnel of the organization as to objectives and current practise constituting the control.

As illustrative of a piece of research, such as would be carried on by the methods man, I have in mind a particular study of the relative merits of distribution through jobbers and through branches. The methods man made the study and collected all the facts. The executive then went over them with him and made suggestions for further investigation. After further investigation there were further consultations, and in the end the executive decided to use both methods of distribution under certain restrictions in each case. The methods man then set up the methods and instructed the persons involved how to put the decision into practise.

I have in mind another case where there was a question of the regular delivery of a very large number of small parcels; whether this could best be done by the firm's own wagons or by contract. The same procedure, as above described, was followed. In this case it was decided to deliver by contract, because they found a contractor who was already covering the ground to be covered and could make the deliveries at very little additional cost to himself, and, after including a substantial profit, at a lower price than the firm could make the deliveries with their own wagons.

In another case the question arose whether to manufacture certain articles or have them manufactured elsewhere in a plant especially equipped to produce the article in question. The decision finally turned on the fact that the only actual cost to the firm that could be saved by having these articles produced elsewhere was the direct wages involved. The concern happened to have plenty of floor space and power and the necessary equipment, which it was not otherwise using, whereas the outside concern did not. Even though the outside concern had better facilities, by the time it would have added overhead expenses and a profit, its price would have been considerably over the direct payroll of the concern in question plus a substantial profit.

You may say that these questions come up in every business and there is nothing different in what I have suggested from what is done in every other case. I think, however, you will find that in the majority of cases decisions of this kind are made on insufficient facts; at least, that has been my experience. The point I want to make is that the ordinary executive who is required to make decisions usually has not the disposition or time for getting the facts, and therefore makes his decisions on insufficient information. If he has a methods man who has no right to make decisions, the methods man must necessarily, to justify his position and in the interest of his own ego, dig up a body of facts which will almost automatically protect the executive and therefore the firm against an unwise decision.

Essentials of Control Methods

While it is not practical in a brief talk to give as much detail as I should like, it may be worth while to view some of the fundamentals which should underlie all control methods.

The subdivision of the organization and the accounting classification should be coordinated with responsibilities. If you buy a peck of apples, peaches, pears and oranges, and they are delivered mixed in one basket which is obviously short measure, you have no way to know in which fruit you have been short-measured. Likewise, if the costs incurred under various responsibilities are mixed under one accounting classification, though the total cost may obviously be too great, you will have no way to know with which executive the question of excess cost should be taken up. Costs should be subdivided and classified according to the different persons in a position to affect them. Then, if a cost is too high, you know with whom to take the matter up.

I have in mind a case where a certain branch of an industry was not paying and the owners were almost on the point of discharging the manager. However, when we came to classify costs according to the persons in a position to affect them, it soon became apparent that some of the largest items of cost with which his branch had been charged were absolutely outside his control.

I had an amusing case in connection with a large dairy company. The costs of the cowbarn seemed high. When we came to analyzing these costs into terms of responsibilities, we found an item for removing manure which the superintendent of the cowbarn said he had nothing to do with. When the item was put under his control, it was soon transformed into a credit representing what he received through the sale of the manure in excess of the cost of its removal.

Costs may and should be recapitulated *through statistical methods* according to commodities, functions, services, etc., but *the official records of the company should be and should remain in terms of responsibilities.* Every account, so far as responsibility for it is concerned, should be synonymous with some individual, and no individual should be charged with the cost of anything outside his control.

Like things should be recorded alike at all times in all branches and departments of an enterprise. No executive, not even the president of the company, should be allowed to make exceptions to this rule; otherwise you might as well save the trouble and expense of cost records. I had an experience not far from here which illustrates the advantage of keeping accounts in comparable items. There were some thirty distributing branches of the concern in question, and when the expenses of all of these branches had been reduced to comparable items and the items expressed in terms of percentage of branch sales, and when each branch had been informed of its own figure, the best figure, and the average figure of all the others, there was some lively voluntary scrambling to reduce expenses on the part of those who had items substantially above the average. The work involved in standardizing the classification was very little and the annual saving ran into tens of thousands of dollars.

One sometimes thinks that there can be no advantage through keeping comparable accounts in different plants and branches where conditions are different. Experience proves quite the reverse. It is not at all uncommon that the plant which you think should be cheapest on a given item is the highest. Handicaps in any given particular very often stimulate effort, and on the other hand, favorable circumstances very often lull to sleep. The very obviousness of differences in conditions often serves as an incentive to the persons with a handicap to bring their costs in harmony with those of the other branches.

I must not fail to emphasize the fact that nothing can be gained by keeping records, no matter how well they are kept, if one or two of the top executives are going to keep them under their hats. I have already said that you cannot control anyone. On the other hand, you can educate, stimulate and help everyone. Stimulation is the all important factor, and I know of nothing so effective as accurate competitive records. The higher you go in the organization, the more effective competitive records are. The comparison of even such items as rent, storage, delivery, etc., per dollar of value, even though weights and bulks are different, will often be more stimulating because of the very differences which must necessarily exist. A search to find the occasion of large differences will often uncover elements of costs which can be eliminated. Comparison stimulates an ego interest—an opportunity for recognition among one's peers.

Another basic principle, applicable to all methods so far as I know, is the adoption of a unit system—like bookshelves and filing cases, as it were. Departmental operating reports should be like unit bookshelves. Each should be separately complete, yet uniform with the others in its major characteristics. They should be summarized in terms common to all so that a list of these summaries added together will constitute a complete report for the concern in question. By this method it is possible, if the result is unsatisfactory, to go back through the unit reports and definitely locate the units in which the trouble exists. Assuming that the accounting classification is in terms of responsibility, you will have no trouble in knowing the exact individual with whom a matter should be taken up.

The Importance of Budgets

The budget is fundamental to an effective control. In brief, the budget is nothing more or less than an estimate; an estimate is nothing more or less than a standard; and a standard is nothing more or less than a measure by which we are able to judge results achieved. Our forefathers were content to bathe in a pan with a bucket of water and a sponge, and the only reason we are not content to do the same today is the standard which has been set by porcelain bathtubs and modern plumbing. We all know to how much trouble one goes to get a nice bathroom in these days, or a nice motor car. We must not delude ourselves into thinking that this is chiefly because of their convenience. The real reason is that they have become established as standards by which to measure success. If we take the same trouble in making our budget that is taken in making plumbing fixtures and motor cars, and give the budget the same recognition and prestige as constituting a standard, we shall find the same effort on the part of all the members of the organization to meet its standards as they now display to get good plumbing and good motor cars.

Let me warn you as an executive against making the budget yourself, or against having the accountant or any *one* else make it; you had as well not make it at all, because the person who is expected to meet its standards has only to say that you have left something out or made an insufficient estimate. On the other hand, if the budget is made in terms of the accounting classification and each item is determined by the person in a position to affect it and no charge can be made against the budget item that this same person has not approved, you will find that you have an automatic control. Of course the methods man should make the budget in the sense of controlling the items in which it is made, its form, and finally the rewriting of it, but the figures should be made by the various persons in a position to affect them.

Budgets should be flexible—that is, in terms of fixed and variable costs—so as to enable the making of a forecast under the same conditions as actual results are achieved. What is the use of making a budget on the basis of an assumed volume of business and then discovering you did only half, or twice, as much business? The figures are not comparable and the budget is useless. On the other hand, suppose you determine your budget on the basis of unavoidable expense, regardless of the amount of business done, plus a certain percentage of the business done; then you will have no trouble in establishing a standard for comparison with actual results no matter how much business you do.

To illustrate, suppose we want to get an estimate for printing a lot of circulars but do not know how many we want. If the printer tells us that it will cost $100.00 to get the circular ready to print, plus $10.00 per 1000 for as many circulars as we want, we shall have no trouble in creating a standard by which to check the bill when received, no matter how many circulars we have printed. Budgets in all departments of an industry should be made on this same basis.

Budgets should be used for three purposes:

1. Policy determination; that is, budgets should be made up on various hypothetical conditions as a means of determining policies. For example, on various methods of selling, on different volumes of sales, etc.
2. Allocation; that is, where you have a total sum of money for a total purpose and you need to allocate it to different persons to carry out different phases of the work involved.
3. Comparison of performance with forecasts; that is, for determining the effectiveness of the business as a whole and its various department branches.

Do not forget that each item in the budget should in every case be made by the person responsible for performance; that is, the person who has an opportunity to make good the forecast. When budget costs are exceeded they should be studied in the light of what they should have been under the exact conditions that exist.

Let me add one further caution; do not permit budget figures to be based on past performances; you had as well not make the budget. Budget figures should always be based upon an estimate of what could and should be accomplished under the conditions which are expected to prevail when the work is performed. One of Taylor's greatest contributions to management was his substitution of time-studied standards for past-performance standards as a basis of judging current performance.

Where a budget is properly operated you will find very little need for reprimanding; those who do not meet its requirements almost invariably will voluntarily develop an ability to avoid their mistakes, or will voluntarily resign.

Conclusion

Let me suggest that no one attempt to set up top control on the lines I have outlined, without realizing fully what it means in terms of organization and expense. It is estimated that present day production methods have increased overhead costs 30 per cent at the same time that they have decreased total production costs by two or three times the amount of the increase. The same is true of the top control I have endeavored to outline. It will cost money and executive effort, and education and training all along the line; but it will be worth it.

THE distinction between the political character of government and the economic character of business is becoming very much blurred. Business is becoming distinctly political, what with employees' representation, labor troubles dependent on the verdict of public opinion, and other similar developments. And government is becoming more and more economic. The political arguments and leverages and the sentimental oratory with which people strive to sway purely economic decisions of government grow more and more anachronistic, even at the same time that business finds more and more use for the arts of propaganda and the spellbinder's gift of arousing emotional fervors. The economic functions of government bid fair to render inadequate the traditional methods of public finance and to force a new emphasis on methods more like those used by large-scale business in allocating its overhead costs and in collecting them from the public. (J. Maurice Clark, *The Economics of Overhead Costs,* p. 458.)

Progress Towards Science in Marketing[1]

Application of Scientific Method in Sales Research, Organization, Budgets and Operations, Physical Distribution and Advertising

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WE have reached a point where recognition of scientific management as an essential and profitable factor in the control of production is almost universal. The fact that marketing lags thirty years behind in the adoption of scientific method in its management is a sad but true statement. Yet here and there in business the application of scientific method in marketing management can be found, here in one phase, there in another, somewhere in virtually every one of its phases. In the scope of this paper only the briefest description of the ways in which scientific approach or scientific method is being applied to marketing problems and control of marketing operations can be outlined.

Marketing Research

Research in its many forms underlies scientific management, wherever it may be found. In marketing, research has made long strides, thanks largely to the leadership of the advertising fraternity. The consumer is the important factor in distribution and today intensive study is made of his buying power, habits, disposition, traditions, customs and prejudices. It does not suffice to determine the real value of a product; it is necessary to ascertain as fully as possible the psychic and social values which the product holds for the consumer.

The next step is to study the geographical and economic considerations which affect the mass of consumers which constitutes a market. In making this survey the type of product to be marketed becomes an influential factor in determining the scope and nature of the study. One must ascertain the types and geographical distribution of the consumers and the marketing agencies and channels through which they can be reached. Sometimes the object is to find social or economic strata; again it may be to find the groupings of homogeneous populations.

The study for certain products will lead to the selection of specific prospects, such as types of industry, or individuals of large incomes, or the followers of certain sports or hobbies. More often, however, the study will be of products of wide use which are ordinarily marketed through mercantile channels. In this case the research is to disclose the places where consumption by the public is concentrated into purchases by those engaged in the re-sale of the products. Thus, the object is to find the trading centers for a product and the trading areas commanded by those centers.

When we have reached this stage of our study of a product of wide consumption we are ready to attempt to evaluate the consumption of our market by geographical units. As the county is the unit which changes least and of which we have the most complete data of any unit smaller than the state, it is usually selected as the basic unit. In some instances it is feasible to select the trading center or the trading area of the center as the unit. The intrinsic value of the unit of product may determine which method is employed or it may be decided by the need for refinement in the market evaluation. Goods of high value which are durable and bought infrequently, or goods distinctively of the "shopping" type may be found only in stores of towns in the population group above five or ten thousand and the trading center method of analysis will give adequate results.

The county is more commonly selected because better economic data is available, and more precise and adequate evaluation is possible. The comparison over long periods of time is not affected as in the case of cities with their habits of annexation of contiguous areas.

A great variety of economic data about counties is now available and the facts disclosed by census and other reports can be weighted and combined to give a most valuable index for the consumption of a wide range of products. Many of the factors and methods employed in typical market evaluations of this kind have been published and furnish a clue for such evaluations for individual products. In addition various periodical publishers have furnished most valuable material regarding economic data, purchasing power, standards of living, etc., of counties and important cities and of the trading areas dominated by recognized trading centers.

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[1] Argument of a talk before the New York Metropolitan Section of the Taylor Society, April 15, 1926.

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The value of these market evaluations is that they furnish a standard to be used in conjunction with past sales records and other information in the perfecting of budgets and quotas for a business. The word "standard" is used advisedly to describe a useful tool which changes slowly and is based upon uniform treatment of economic data without the injection of opinion in the treatment itself, although intuition, experience and judgment may have played some part in the selection of the data to be treated. The market evaluation is a proved tool; it has passed from theory into accepted practice.

Research has paid big dividends in the field of product analysis. Many a moribund product has been given new life by study which has introduced new merchandising factors to win public favor. A modification of design, a new finish or an improved container may multiply sales. So, too, research has opened new markets by developing new uses. It has produced startling economies by simplifying and standardizing products—or sometimes by diversifying by the addition of by-products or complementary products to stabilize production, prevent wastes or lessen the market risk.

It is the research group to which the manufacturer turns for light upon proper price determinations, brand protection, or forewarning of competitive activities.

In order to make sure that the research group is kept busy, he asks it to study the selection, training and operation of salesmen, the most profitable type of selling equipment, and the elements of control of the marketing organization. This group, also, may find major tasks in such problems as inventory control and the selection of distribution centers and methods.

Sales Organization

The progress of scientific management in production has been marked by the recognition of functional organization and the development of staff groups. These developments are now taking place in marketing.

The simple form of sales organization, still largely common, is the military form with a sales manager supervising a group of salesmen, and an absence of any functional or staff workers.

Advertising, as it became more common, forced the first functional recognition. As this division grew, it broke into sub-functions some of which have become independent functions in large organizations. Sales promotion is one sub-function which has thus grown in importance in many organizations.

As physical distribution became more wide-spread, the charge of finished goods inventories was given to sales, and warehousing began to emerge as a separate function.

As stocks began to be scattered over the country in strategic centers, it became necessary to decentralize the credit work and thus the credit function has frequently passed from a division of the major function of finance to a functional division of marketing.

Most recently of all, a function has emerged which usually bears the name of merchandising. As yet no standardization of this function is visible but in general it takes over those problems of marketing which have to do specifically with the product and the coordination of the sales and production programs. In some instances, it has absorbed the function of warehousing.

It is never easy to distinguish between functional and staff groups. In marketing a staff group is now often found under the title of sales research or commercial research. Its work has been described.

Only rarely is a staff group found in charge of planning marketing activities. It is in this field that marketing has most need to borrow from the experience of production. The development of science in marketing will be halting until the need for planning and scheduling is better appreciated.

A staff in charge of records and files is quite common but the development of statistical work in staff form is not common. In many organizations, research, statistics and planning are found in a single staff group.

Occasionally one finds a budgeting staff attached to the marketing organization but usually the budget staff serves the entire organization. Similarly, in very large enterprises, sales auditing or other staff divisions appear.

Sales Budgets

The word "budget" as it is now so frequently appearing in published articles has no clarity of definition among business men. Its increasingly wide use, however, promises to have an influence on the adoption of scientific management in marketing. If we accept the meaning of budget to be a statement of predetermined condition or status at specific periods, then it necessarily fosters research and analysis—and the attempt to control by budgets must foster the planning of the operations to reach the predicted budget condition.

In the marketing function of business the quantity budget is usually spoken of as the sales quota. There are many ways to approach the establishment of a sales quota. A common but extremely faulty method is to make an arbitrary advance over a past sales record. Another somewhat common method is to establish it upon the expectancy expressed by salesmen and the supervising staff. The chief fault of this method is that it takes no account of the sales possibilities of the salesmen's territories.

The real sales budget must take into account in each territory the potential business (the market evaluation), the record of past sales, the planned marketing efforts for the period, the stage of development of both the territory and the salesman, the activities and advantages of competitors, and the forecasted business conditions.

Expense budgets are more widely employed than quantity budgets. The usual faults with them are that they ignore the need for any forecasting of conditions and lack the element of flexibility to permit adjustment to meet unexpected developments. They are not designed to distinguish between the fixed charges that the personnel cannot control and the expenses that should fluctuate with the attained volume of business. At least one large marketing organization has attained a high measure of control by adopting a budget based upon the accounting method developed by John H. Williams.[3]

Control through budgets has the great virtue—when well done—of setting up standards which permit a large measure of administrative responsibility to fall upon divisional executives, even down to minor officials, and thus help to develop initiative, resourcefulness and power of decision. It is a powerful weapon in the development of morale and the spirit of cooperation in an organization. It is another example of the result of establishing fair standards against which men may measure individual achievement and upon which management may more fairly and clearly develop its present and future executive staff.

Forecasting is virtually essential in the making of budgets. We are beginning to comprehend that we may have business depressions even though money is plentiful and interest rates low. Many an industry can establish a reasonably accurate forecast. We are able to go even farther than that and establish a forecast for the individual establishment. The work is far from perfect, largely due to gaps in our knowledge of essential basic data, but some of us have been sufficiently successful to whet our appetites for this highly interesting—and usually highly profitable—work.

Sales Operations

Most salesmen's territories have been assigned upon an arbitrary or intuitive basis. The rising cost of marketing has forced attention to the possibility of more scientific assignment of territories. In this field the evaluations of consumption and volume of purchases by distributors have become an important factor. It helps to determine where the law of diminishing return will operate against intensity of effort. With a predetermined cost ratio of a salesman's operating cost, it is simple to ascertain how much business must be reasonably attainable to maintain or lower the cost ratio.

But this alone does not suffice. With a standard of obtainable business in a country or a city, we can determine how much money we can spend to obtain it; this immediately leads to a study of the frequency of call necessary to get the business or to retain it against competition. Nearly always we find that there is business we can get if we are willing to forget the item of a cost standard. Usually we find that some adjustment between our conflicting desires is essential and that we really gain a profit by letting our competitors have some of the business in sight.

As we pursue our studies on territorial assignments, we find that we can afford to call upon one town once a week and upon another perhaps only once in two months. Then, as we get deeper into the subject, we find that we need to classify our individual customers and prospects, especially in the larger places, because the prospective business of one may demand a call once a week and another, perhaps only four blocks away, may have a normal prospective size of order that will warrant a call only once in two months. At about that point we probably have a growing suspicion that the jobber has not been killed off because he performs a genuine service more cheaply and efficiently than we can do the same work ourselves.

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[3] "A Technique for the Chief Executive," *Bulletin of the Taylor Society*, Vol. VII, No. 2, April, 1922.

And now, having found out that we can profitably finance only a certain number of calls per year upon each county, town or customer—and that a salesman can make only a certain number of calls each year—we find it necessary to make an adjustment between the figures of attainable business and the fixed limit of calls. This adjustment usually means two things: a selection of the places and businesses we will call on, and the setting of a specific standard of salesman's cost for the type of territory being studied. This ordinarily leads to the classification of territories by types and the setting of a cost ratio standard for each classification so that we may compare the results of the work of individual men.

At this point another difficulty arises. The salesman is not necessarily gifted as an analyst and a planner. His routing and our call frequency standards do not coincide. So we find ourselves forced to make routing a staff job. Sometimes a simple zoning of his territory will serve reasonably well. Usually, however, we must lay out for him a cycle routing which is arranged to meet the necessary call frequency. The problems of cycle routing are too complex for discussion here. I can only say that when the method is once established, it becomes a simple matter to route a territory.

The net results of evaluation, frequency of call, and routing studies is often a revelation. In one case nine men are now working where three men were formerly thought to be getting all the business available. The cost ratio is slightly less. The house is in a far more dominant position than it was before and both mail orders and repeat business are now obtained that formerly went to competition.

If we are to have this close assignment of work, then reports and records become increasingly important as an element of control. Fortunately, when a business has advanced to this stage, the struggle with salesmen to obtain reports dies away because the house is prepared to repay in kind and to furnish reports and sales aids which compensate the salesman for his extra labor in report writing.

A striking feature of records today is the thoroughness with which the development of the individual customer's business is watched and recorded and the salesman supplied with definite, helpful information to aid him in getting orders. More than this, in some progressive marketing organizations one or more contacts with the customer or prospect are carefully scheduled to be made by mail between the salesman's calls.

An interesting development of these studies in a few organizations has been the creation of a sales promotion or "mail sales" division to carry on an active marketing campaign in those towns where the study shows a salesman cannot profitably make a personal call. The success of this "mail sales" work tells its own story.

This more intensive type of sales operation has naturally brought about a closer supervision. Essentially the condition is no different than accepted factory practice. The salesman is not only a human being; he is also one beset with influences peculiarly destructive to morale. It is easy for him to acquire unconsciously habits which may limit his efficiency. The solution often lies in a more active and direct supervision in the field. So we see a development of field supervisors who travel continuously with the men of a group of which they have charge. The groups commonly are composed of eight to twelve or more men, depending upon the congestion of the particular territory and the distance of travel necessary. This method is growing in favor because it is found profitable as the group functions enough better to more than pay the additional cost.

In the whole field of industry, one phase of scientific management that is having much attention is the establishment of standard tasks as a basis for incentive forms of compensation of workers. This phase of scientific management is almost sure to come up when sales managers get together. Not that you hear talk of standard tasks as such, for this phraseology is not common in marketing. The quota and the bonus are, however, familiar terms. The increasing need for control is sounding the death knell of the commission form of payment of salesmen. The salary-and-commission form often fails because the standard set has no scientific basis.

The unending contention over the fairness of methods of compensation is probably doing more to drive the marketing managers of the country to a study of what science may be able to contribute in the way of standards and methods than any other single factor.

Where some degree of scientific analysis and planning has been applied to marketing, one is almost sure to find a sincere attempt to establish standards of performance. In marketing, the "point" method is a favorite way of presenting the standard. A "point" is an arbitrary value and each element of the sales task is rated as worth so many "points." This method has the desirable feature of making possible a flexible incentive as the number of points may be varied without changing the basic element. Thus if it becomes desirable to move the surplus of a stock item, an increase in the number of points will usually produce prompt action. The basic task is the attainment of a certain number of points in a given period and a bonus is given for excess points. The effect of the point system is to produce balanced effort to meet the changing needs of any of the major functions of the business.

Merchandising as an Industrial Function

Long ago the administrator learned that one of his major problems was the maintenance of peace within the organization between production and marketing—two functions with strong tendencies to have opposing views, if not actual lack of cooperation. Each suffered because its executives had difficulty in envisaging the special requirements and limitations of the other function.

It was only as industry grew or combined into large units that an intermediate function began to emerge. This function is still mostly in the chrysalis stage and even its name has not been standardized. However, it is beginning to acquire the name "merchandising," one of those blanket names which needs identifying explanation every time it is used.

Several causes operating together brought this new function into activity. The sales department could not sell just what the factory could most profitably make, nor could the factory prosper if it attempted to make precisely what the sales department could or would sell. Peaks and valleys were the characteristics of the curves of both production and sales. Factory schedules were frequently upset by emergency demands from the sales group. Resistance to change in both groups gave competition an advantage here and there which took seasons or years to overcome. Current prices were a bone of contention between the two functions.

Probably the growing interest in the subject of psychological fitness for specific tasks played no small part in the establishment of the new function in the organization. The sales department was compelled to study human beings and their reactions in its job of selling, and to think in terms of material products in attempting to cooperate with production. A marketing executive's aptitude and interest was commonly directed toward one of the two phases while the other was largely neglected.

The new merchandising function is employed as a first aid to the administrator in his task of coordinating all the functional elements of the business. It is charged with initiating the development of new products. It is expected to specify to the designing engineers the merchandising factors which will help to build sales volume. It is held responsible for the character, size and balance of finished goods inventories and thus inherits the job of predicting future demand and translating it into current factory orders. It virtually controls prices and terms of sale.

The merchandising department aids production by early placing of stock orders and by controlling the acceptance of job orders, thus assuming a large measure of responsibility for steady employment of factory facilities. It gives early notice of raw material or equipment requirements—or of approaching obsolescence of products—thus enabling the production department to make early plans and schedules. Often it is of particular service to production in maintaining balanced output by its ingenuity in suggesting new products, or in searching out new or broader markets for existing products.

The merchandising department serves the sales department by maintaining better delivery service, and by cooperating to develop new markets and new products to expand sales volume or to forestall competition. It aids in training the sales staff and in educating and interesting distributors.

The secret of successful operation of a merchandising department is found in the practice of the merchandising executive staff of spending approximately half its time in the field and half in the plant. It is not primarily responsible for either sales or production. Yet the nature of its work and contacts brings ever-growing knowledge of the needs and problems of both, while permitting it to use a freedom of judgment almost impossible for the executives directly charged with the operations of sales and production. No merchandising organization can successfully function until the whole industrial organization has learned to replace contention with cooperation. Nor can it successfully operate where it attempts to put on the mantle of management instead of recognizing that its objective is to be an aid to management.

Physical Distribution

The problems of physical distribution have become acute as markets expand and the distributor's interest in stock turnover leads to more "hand-to-mouth" buying and a new appraisal of the value of service.

A great amount of research has gone into this phase of marketing. The strategic location of branch stocks and the proper layout and operation of warehouses are carefully analyzed and standardized. The character and size of the inventory investment is under constant scrutiny. The growth of public merchandising warehouses is one of the interesting developments of the period. The movement toward direct selling, forced somewhat by the manifest inefficiency of the majority of jobbers, has fostered the growth of these warehouses to take over one or more of the functions of the jobbers.

The scientific type of mind has been turned loose upon the problem of what constitutes the ideal type and channels of distribution. The result is proving most interesting. On one hand is appearing the disintegration of the huge textile commission houses; on the other we find an industrial establishment marketing all of its output through its own chain of retail stores.

Even where the familiar channel of trade—the "regular" channel of jobber and retailer—is retained, we see a new scrutiny and evaluation of results. Just now there is a distinct trend toward limiting the number of outlets. Two factors are at work: the realization that no sale is complete until the goods pass out of trade and that therefore the manufacturer must actively cooperate in emptying the dealers' shelves to get repeat orders; and the further realization that real cooperation by the dealer comes when the volume and profit are large enough to create interest and action.

Accordingly we find the marketing organization of an industrial business selecting certain jobbers to act as distributors under some form of protection and franchise agreement. Often the manufacturer assumes all or a part of the cost of a detail or missionary sales crew actively engaged in reselling his goods for the selected distributors. Still more frequently, where sales are made direct to retailers, we find that the selection and limitation of number of outlets is a growing practice.

In this process research and standardization are plainly seen at work. In selecting an outlet and working out a franchise agreement the manufacturer is studying to ascertain if the dealer can and will make the necessary investment in a standard stock adequate for service needs; if he has sufficient merchandising ability to cooperate in creating and supplying demand; and if his ethical code is such that he will maintain prices at the level which will balance desirable volume and fair profit, as well as maintain sales practices which will not injure the goodwill toward the product and the house producing it.

Advertising

In the field of advertising will be found the most forward steps in the adoption of science in marketing. Research is widely employed. Analysis precedes the promulgation of programs. The older sciences and the newer social sciences are helping to mold methods and forms.

Advertising is not considered simply an appeal to create demand. Specific motives underlie the appeals employed and marketing strategy now employs advertising as one of its most effective weapons. It is true that much of the advertising is aimed to create demand and produce buying action. But no small amount is designed to establish consumer acceptance and build goodwill or prestige for the purpose of lessening sales resistance and cutting actual selling time and effort.

Often general or class magazine advertising is intended to maintain at low cost a demand which has been fostered by other more costly means. Sometimes the advertising appearing in magazines of wide circulation or newspapers with coverage of important trade zones is primarily a matter of sales strategy—the building of distribution by securing more retail outlets. The modern advertising man has a good evaluation of the psychological reactions to advertising and makes intelligent use of the printed word to accomplish ends which may not be apparent to the casual reader.

The value of research and tests is appreciated. Intensive study is made of the consumer attitudes, habits, traditions, buying power and buying disposition before a new product or campaign is launched. So, too, it is becoming customary to try out the elements of a complete campaign on a relatively small and fairly typical geographical section to ascertain the reaction of consumers to product, price, package, sales presentation and merchandising action. It is quite possible through these localized sales tests to rid a program of its more glaring faults and to get a quite clear idea of the repeat value of a product and the cost of securing a customer.

A general attempt is being made to use scientific facts in eliminating the waste in current advertising. The development of more scientific use of design, art, color and copy is constantly raising the standards in advertising and making its practitioners more and more truly professional. The use of the various advertising mediums and the character of their circulations are subjects of deep and unceasing study, greatly to the profit of the business which finances the advertising.

One feature of the work of the advertising department and the advertising agency is having a marked effect upon the marketing organization. This feature is the development of planning to secure close coordination of the operations of a period or campaign. The very nature of advertising contacts and the immovable publication dates of magazines and papers makes necessary the careful planning of future activities. This lesson has not been lost upon the other parts of the marketing organization and careful planning, scheduling and preparation are no longer absent in modern sales operations. Not that I would imply that these essential steps are yet common. But recognition of their importance is becoming general and the cost of operation and intensity of competition are forcing their adoption.

Comparison with Development of Scientific Management in Production

1. Job analysis and time study: developing slowly but steadily in marketing.
2. Standardizing working conditions and methods: already highly developed in some sales organizations.
3. Development of special machines and tools: a parallel is found in sales in the development of selling aids.
4. Functional division of organization: now quite common in larger sales organizations.
5. Staff development: one of the marked developments in marketing.
6. Planning and scheduling operations: but little developed in marketing as compared with production.
7. Preparation to prevent delays and wastes: little developed in marketing.
8. Inspection of operation of plans and processes: well developed in some large sales organizations and almost entirely neglected in most smaller businesses.
9. Budgetary control: well developed in companies with strong research staffs but very weak in most others.
10. Master plans of future activities: little developed in most businesses.

Plan now to attend the annual meeting

December 9, 10, 11, 1926, Engineering Societies Building, New York City

Joint session with A.S.M.E. on problems of organization

Other sessions on research, administrative policy and industrial psychology
Special sessions for younger members and teachers of management

Principles of Wage Payment[1]

Advocated by the Manufacturers Research Association

Presented by A. B. RICH
Assistant Manager of Works, Dennison Manufacturing Co., Framingham, Mass.

THIS report is of particular interest in view of changing attitudes towards methods of wage payment. The scientific management movement started with a fairly definite emphasis on piece rates as a method of wage payment. Then followed a reaction against piece work and a substitution of emphasis on various types of premium and bonus systems, and in some instances on hourly rates. It is interesting to note that a serious and unprejudiced study by a committee of a group of Massachusetts manufacturers brings our attention back to the desirable features of the piece work system properly established and administered.—The Editor.

— I —

THE following statement of the Principles of Wage Payment advocated by the Manufacturers' Research Association represents the ultimate result of an effort, on the part of eight of its members, to analyze and compare present day methods of paying wages for the purpose of discovering and segregating those features which are inherent in all effective systems. This study was originally undertaken purely for the benefit which each participating company expected to derive from the undertaking and with no thought of the findings being of intrinsic value to organizations or individuals outside the collaborators. Only after it had been demonstrated beyond controversy that the essential features of any equitable and effective system of wage payment are few in number and generally obscured by provisions embodying no real merit, was it suggested that a statement such as the following would be of general interest. It is offered for what it is worth without further apology.

The principles of Wage Payment advocated by The Manufacturers' Research Association include three general types of payment.

I. Piece Work—(general term for payment of the individual on the basis of amount of production.)

II. Group Piece Work.

III. Day Work.

I. Piece Work

A. The M. R. A. Wage Payment Plan would insist on standardized shop methods prior to time-study.

By "standardized shop methods" is meant "determining the best method of doing work and adhering strictly to that standard until a better one is developed. Specifically it means that materials and the material routine be scientifically studied and systematically governed; that machines be overhauled, with particular reference to the work they are called upon to perform, as regards power, drive, speeds, gear ratios, tools and appliances, and all other factors affecting the amount and accuracy of work put through them; that processes, both hand and machine, be constructively studied and brought to the most efficient stage; that methods of delivery and removal of materials and product, and in general of the administration of all work of the establishment, be similarly scrutinized and standardized, and finally that all such standards be systematically maintained up to the goal set."[2]

"The analysis of a piece of work into its elements almost always reveals the fact that many of the conditions surrounding and accompanying the work are defective; for instance, that improper tools are used, that the machines used in connection with it need perfecting, that the sanitary conditions are bad, etc. And knowledge so obtained leads frequently to constructive work of a high order, to the standardization of tools and conditions, to the invention of superior methods and machines."[3]

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[1] Report presented at a meeting of the Eastern Massachusetts Section of the Taylor Society, with the cooperation of the parent society, Cambridge, Mass., May 7, 1926.

The study was carried on by the following group: C. F. O'Connor of the Universal Winding Company, A. H. Bainton, Richmond Viall of Brown & Sharpe Manufacturing Company, A. B. Rich of the Dennison Manufacturing Company, W. P. Cahill of The Graton & Knight Manufacturing Company, H. H. Farquhar of the Harvard School of Business Administration, B. A. Hildebrant of the Norton Company, E. T. Clary of the Whitin Machine Works, J. Frank Dorney of the Walworth Company, and R. L. Tweedy, Director of the Manufacturers Research Association.

The report was originally prepared for companies within the Association and later, since it seemed highly desirable that it be placed at the disposal of larger groups of employers, it was issued in pamphlet form by the Bureau of Commercial and Industrial Affairs of the Boston Chamber of Commerce. It is reprinted here by permission of the Manufacturers Research Association and the Bureau of Commercial and Industrial Affairs.

[2] From "Incentive or Production Basis of Wage Payment," by H. H. Farquhar.

It is obviously absurd to allow time wasted in unproductive effort or shop conditions which prevent efficient performance to enter into time allowances. A production rate, established on the basis of time-study, is a wage to be paid for the performance of a definite task. For a task to be definite, not only must the amount of resulting product and the required standard of quality be specified, but methods which will produce this quality with the smallest possible co-efficient of error must be devised.

Without preliminary standardization, time-study rests upon a shifting foundation. If improvements in method, equipment and attendant conditions are made after the rate has been set, the rate is thereby immediately invalidated and the work of rate setting must be done over again. This often provides grounds for argument between management and worker. While the limit of possible improvement in methods, equipment and shop conditions will never be reached, and it will be necessary from time to time to change rates resulting therefrom, in so far as possible a time-study should be based upon conditions which approximate the ideal at the time when it is made.

Workers should always be encouraged to suggest improvements and should never be led to feel that no advice from them is wanted. It would be exceedingly short sighted to do anything which would so effectually kill the interest of the worker in his work.

The desirability of standardizing shop conditions prior to time-study should never be used as an argument against making a change in method or equipment thereafter, provided it can be demonstrated that such change does represent a *real* advance. Standardization works to conserve past achievement without obstructing future progress; and in so doing it avoids making changes which do not represent improvement.

B. The M. R. A. Wage Payment Plan would insist that production rates be set only on the basis of accurate time-study.

One of the important factors in any equitable rate is the element of time. A rate set without due regard to this element of time is bound to be unstable. In order to arrive at an accurate rate it is necessary to measure with great exactness the time required for the performance of any given task. Rates which are set not on a basis of time-study but on the basis of past records of performance, foreman's estimates, collective bargaining, or what not, are bound to be approximations at best, and to be influenced by the type of workman that has been used on the task in the past. This might well result in an easy rate, a high rate or an average rate. Such rates, at one time or another, result in inequitable wages of one group of workers as compared with another, or as between individuals. A goodly amount of responsibility for discontent and unsound industrial relations is chargeable to the practice of cutting rates. While time-study has not achieved the happy result of making it forever afterwards unnecessary to change rates based upon it, it has gone a long way toward bringing about a stable condition and furnishes the surest basis of calculations with which we are acquainted.

C. In order to make it possible to measure and compare the efficiency of operators and departments, the establishment of a definite task becomes at once desirable. For a good, average worker the attainment of this task would represent 100 per cent efficiency.[4]

If production rates are set on the basis of accurate time-study, it thereby becomes possible to evaluate the performance of individuals and departments. An exact measurement of performance may be obtained by comparing the productions of individual operators with the standard (or 100 per cent referred to above). Comparisons of this kind often serve the double purpose of helping to bring to light manufacturing irregularities previously undetected.

The establishment of definite tasks is a great help in the matter of placing workers properly and at work for which they are best fitted. It often shows that a worker unsuited to one job may be admirably qualified for another position.

D. The M. R. A. Wage Payment Plan would guarantee a day work rate for operators in all cases where the worker is unable to perform this task, on account of conditions beyond his control. It would

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[3] From a paper contributed by Taylor to the A. S. M. E.

[4] Note: Care must be exercised to avoid the mistake of averaging averages.

charge these excess costs to the proper expense account and distribute them together with other overhead charges.

Piece Work as a method of wage payment should be based on a guaranteed minimum. This is in accord with the best modern practice and is based on simple justice. The worker should be safe-guarded during the probationary period of learning and against idle time later on, as for example, when a machine breaks down; or, where, though busy, he fails, for cause beyond his control, to make standard. It is only by guarantee against loss occasioned by idle time that it becomes possible to get a true idea of what a workman can do under incentive payment.

E. The M. R. A. Wage Payment Plan would establish definite breaking-in periods for new operators.

This is predicated on the grounds that it is fair to both management and men, in that it allows the operator sufficient time to become accustomed to the work and protects the management from paying day rates to workers who should be operating under an incentive method of payment.

F. The M. R. A. Wage Payment Plan would provide instruction cards prescribing the exact conditions under which all operators should work; i.e., feeds, speeds, number of pieces per hour, set-up time, etc. In addition to these instruction cards, there would also be rate cards showing base rates and the amount of production an operator must turn out in order to obtain these rates.

Explanation of How "Rate and Instruction Cards" Are Used

On the work used in this illustration the operators are supposed to make $.48 per hour. A chart (like the following) on this basis shows the price for all productions necessary to make $.48 per hour.

CHART

Pieces per hour	Price per 100
1	$48.00
2	24.00
6	8.00
10	4.80
100	.48
140	.34

Looking at this chart, in the price column opposite 140 (140 being the average pieces per hour taken from the Instruction Card) we find $.34 which is the price per 100.

As the operator is going to set up his own job in this example, he is allowed $.48 for set-up time. The operator should receive both the rate card and the instruction card before he starts the job. The instruction card should never be changed unless the process is changed; but any price chart may be used.

RATE CARD.

Workman .... **March 24, 1925**

Pieces Ordered	Name of Work	Pieces Made	Time Number	Lot	Price	Hrs.
450	Meat Grinder	450	S-3352	10	$\frac{34}{100}$	4-1
	Cutter—No. 3					
	.48 for set up					

Total Amt. 1.53 + .48 **Aver. per hour** 145

Oper. No. **Sheet No.**

Approved by X **Given by** Y

6875 **INSTRUCTION CARD**

Name Meat Grinder Cutter No. 3 S-3352

Material M. S.

Operation No. 3 Mill Back angle of share opening

Spin. R.P.M.	Fd. Inch Per Min.	Cooling Lubricant	Cut Time Per Pc.	Sec. to Mk. 1 Pc.	Av. Pcs. Pr. Hr.	Machine Used	Machines to Run
2500	Hand	Oil	7	21	140	Vertical	1

Remarks: Set-up time, 1 hour

Position test

John H. Smith

Date 3-24-26 **Checked by** E. Wood

G. The M. R. A. Wage Payment Plan would advocate paying a flat reward to any operator who presented an improved method for performing a task, after which it would recommend that a new rate be established for performing the task in accordance with the new method.

Often, part of the reward which employees receive for new inventions lies in the fact that the inventors become marked for promotion to better positions

Whenever a new method is developed, it should be reported to the constituted authority whose duty it is to determine or estimate the amount of savings which will result. The management would then decide upon the proper reward to be given. This provision is made to promote initiative on the part of workers in the matter of developing improvements.

H. The M. R. A. Wage Payment Plan would provide and maintain accurate records of production and scrap. Whenever it is possible to do so, it would pay a bonus for minimum scrap.

Wastage of materials can often be traced to a gradual breaking down in morale which shows itself in the innate human tendency to treat lightly objects which have come to seem commonplace. A bonus which stimulates the interest of the worker in material economies has been found to help greatly in combating the growth of demoralizing habits.

I. The M. R. A. Wage Payment Plan would provide that a weekly ANALYSIS SHEET be made up from the reports turned in. This would permit executives to obtain direct control of labor costs.

It has not been thought necessary to suggest any definite type of analysis sheet for the reason that whatever form is used would be in large measure determined by the exigencies of the particular business. There are several labor analysis sheets in common use. Perhaps the one advocated by Bedaux is as complete as any of them and covers the item of scrap referred to in section "H" above.

J. Under this plan of Wage Payment, the tasks of all indirect workers are studied and the proper ratio of direct to indirect labor established for each department.

A careful study is made to determine the number of indirect workers (supervisors, movemen, helpers, sweepers, etc.) actually required by each division of the shop and the various duties performed by each of the indirect workers in any given department is listed and assigned a proper time allowance. Next, the total number of standard hours which would be credited to the direct workers in the department, if each operator turned out normal production is computed. The number of standard hours allowed as above for indirect workers divided by the number of standard hours which would be credited to the direct workers for normal production gives a percentage figure indicating whether the established ratio of direct to indirect labor is being maintained.

K. If so desired, a bonus may be paid to indirect workers based on the ratio of the direct to the indirect labor hours in any given department, established in the manner described in the preceding paragraph. The exact method of computing this bonus, and the time interval between any two payments thereof should be determined by the management of any company in such a way as to satisfy the needs and requirements of the particular business.

It has often been found advantageous to pay a bonus to indirect workers. Several variations of the method suggested above have been advocated by different wage payment plans and have worked out very successfully. Our reason for not making a definite recommendation for the payment of bonus to indirect workers is based on our belief that the plan should be modified in each instance to meet the exigencies and requirements of a particular business. The satisfaction resulting from paying bonus to indirect workers depends upon the extent to which this measure is made an integral part of the wage payment plan as a whole.

II. Group Piecework

A. The M. R. A. Wage Payment Plan would include Group Piecework where such a plan would lend itself to the work in hand.

This entails the establishment of a piece rate for the output of the group. Under the scheme, each worker in the team is paid an hourly wage commensurate with the type of work which he is doing. The difference between the group piece rate and the total hourly earnings of all the members of the team represents the bonus earned. Dividing the hourly earning of each individual worker by the hourly earnings of the group would give the percentage of the total bonus which is to be added to each worker's earnings computed on an hourly basis.

III. Day Work

A. Where the cost of establishing standards exceeds the savings which may be reasonably expected to result from the substitution of unit rates of production for day wages, a day wage is recommended.

Systematic records of past performance offer a ready criterion on which to base decision as to whether it will, or will not pay to use an incentive method of payment.

With good records, much can be accomplished toward increasing production, even though an hourly wage is used. Good supervision is imperative for the success of an hourly wage plan.

All day work wages and records of production must be reviewed frequently at definite intervals in order to keep conditions equalized.

B. Wherever, after careful study, it seems feasible to supersede day work by piecework, this step is recommended.

General Comment

The foregoing plan retains features of earlier systems of wage payment which have demonstrated their merit. In like manner, it eliminates features of these older systems which have proved to be objectionable or inefficacious.

1. *Day Work*—All the accepted principles can be applied under the above plan.

2. *Piece Work*—All the accepted principles of piecework, together with measurement and control principles of the point system, have been incorporated.

3. *Individual Piece Work System*—If it is desired to incorporate into the scheme of wage payment the principles of individual piece rates, upon which the Cheney and Dennison plans are based, this should be done as the last step in the process, for the following reason:

The establishment of individual rates, such as the Cheney and Dennison plans require, is a refinement and further development of the principles herein outlined. It may well be regarded; however, as a part of the industrial relations program rather than as inseparable from the payment system.

The M. R. A. Plan preserves the following strong points of earlier systems, the soundness of which the Committee felt had been demonstrated conclusively:

a. Standards based on accurate time-study.

b. Pressure on the management exerted by the system to standardize shop conditions.

c. Indication of material wastage, thereby permitting this leakage to be controlled.

d. Indication of departure from prescribed methods of performance.

The M. R. A. Plan eliminates the following objectionable features inherent in some other systems:

a. Decreasing rates per piece for added increments in production above standard.

b. Sharing the workers' savings with management.

c. Difficulty on the part of the worker of understanding the plan and computing his earnings.

d. Time-studying operations where shop conditions have not previously been standardized.

No particular mode of paying workmen can alone remove the distrust and misunderstanding between employers and employees. What is needed is cooperation between them. As often as they together accomplish a substantial task, the workman should be given, in addition to his regular wages, a fair share of the extra profits. Further cooperation means that the employer examines into everything that must be attended to before the employee can actually devote himself to the job for which he is especially fitted and hired. Perhaps he is wasting time getting material, drawings or tools, or there is something the matter with his machine, or the work is not that for which it is best fitted . . . There is no end to the things that are part of the business of a manager to look after carefully and systematically to get the most out of machines and their attendants. (Carl G. Barth, addressing the National Metal Trades Association at a meeting held in New York, April 4, 1910.)

As far back as 1895, in *A Piece Rate System*, he (Taylor) had spoken of "scientific rate-fixing," and in his paper of 1903, *Shop Management*, he had referred repeatedly to "scientific time study." Gradually in his talks at Boxly he fell into the habit of referring casually to "scientific management," and we have seen that in November, 1910, he wrote . . . that he had in mind the preparation of a paper "on the philosophy of modern scientific management." Now, in October, 1910, Brandeis had a conference with Gantt and several other engineers including Frank B. Gilbreth and Robert T. Kent, and at this conference, held in Gantt's New York apartments, the question came up as to what the system . . should be called. Then was suggested the phrase that Taylor for several years had been using casually, and all present agreed that Brandeis could not do better, in speaking of the system at the rate hearings, than to call it Scientific Management. (Copley, "Frederick W. Taylor," Vol. II, pp. 371, 372.)

Psychology in the Organization of Prison Industries[1]

By EDGAR A. DOLL
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ORGANIZED industries in penal institutions are of comparatively recent date and represent comparatively recent thought in prison management. Up to the days of Jeremy Bentham the prisoner as a worker was a slave who was treated with less consideration than ordinary slaves because there was no purchase cost. There was a plentiful supply and there was therefore no need to give him as much consideration as one would an ordinary beast of burden. This period of penal slavery is not yet outlived in this country, for we still have our ball-and-chain gangs, our floggings and our farming-out of prisoners as revealed in the recent scandals in the jail systems of some of our southern states. If we confine our discussion, however, to modern and progressive methods of dealing with criminals we find that prison industries are founded upon definite theories of penology. It is therefore worth while to pay some attention to the theories of punishment, the public discussion of which is so confused today.

The penal institution has as its first job the safeguarding of its prisoners. Common sense, self-interest and humanity require that this function be performed with due regard to the fact that most prisoners must be returned sooner or later to society. Even the life sentence means only about fifteen years of imprisonment in most states. In dealing with prisoners we must avoid adding to the time sentence of the court such unfortunate consequences of imprisonment as ill health, anti-social attitude and broken spirit. To this end constant effort must be made to see that at the time of his release the prisoner is at least no worse off in body, mind and spirit than when admitted to prison. Therein lies the preventive contribution of reformatory treatment and training.

Considerations of prudence suggest that while a man is serving his time some effort be made to overcome those influences which were instrumental in precipitating his misconduct. However, for purposes of the present paper I feel constrained to pass over the direct measures of medical and hospital treatment designed to improve the prisoner's health and physical condition; to forego a discussion of spiritual and moral training; to disregard the importance of formal education, recreation, and all the other measures which are vital in reformatory treatment and training. And yet each of these items is a consideration in establishing prison industries and is important in a prisoner's industrial placement.

Psychological Classification of Offenders

The scientific study of the individual offender shows that he must be studied with reference to at least the following items: crime, sentence, previous record, age, nationality, literacy, dependents, social attitude, intelligence, personality, skill, physical condition and psychiatric condition. The proper treatment of every prisoner must be based upon his individual combination of these characteristics. These combinations reveal at least four distinct groups on the basis of mentality, physical condition and social attitude, as follows:

1. The better class of prisoners, including those who are not anti-social and who are relatively intelligent, of good personality and stable behavior, amenable to discipline, willing and industrious.
2. An anti-social group, including those who are relatively not amenable to reform because of such things as chronically 2unfavorable attitude, long criminal record, bad associates, vicious habits, industrial laziness, drug addiction and chronic alcoholism.
3. A psychopathic or defective delinquent group, including those with defective personality, constitutional defect, epilepsy, psychoneurosis, constitutional psychopathic condition and extreme insanity.
4. A subnormal group, including especially the

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[1] Paper presented at a joint session of the Taylor Society and the Management Division of the A.S.M.E., December 3, 1925. Abridged.

simple feeble-minded and those of borderline intelligence whose offences are rather the result of their low intelligence and high suggestibility than of actively unfavorable social attitude, and who are relatively incapable of social rehabilitation because of their low mentality.

Classification of Industries

The industries to which a man in prison may be assigned fall under two main heads: maintenance and production. Maintenance activities include household, repair and clerical work incident to the daily life of the institution. Household work includes janitor service, kitchen service, dining room service and all those activities involved in the actual living conditions of the inmates. Repair work includes those trade occupations by means of which the physical plant is kept in good condition. Clerical work includes those office duties and those directing, supervisory or recreational pursuits incident to the normal life of an institution.

Under productive industries we may make a separation of food and manufacture, sub-divided again with reference to consumption and sale. Some production in both food and manufacture is carried on for the actual maintenance of the institution. Therefore we must not think of productive prison industries as restricted to the manufacturing industries conducted for direct profit as contrasted with those which bring an indirect profit by their contribution to maintaining the institution.

These gainful productive industries are of several types according to administrative organization, namely, contract labor industries, prison-controlled monopolies, state use manufacture and interstate use manufacture. The contract labor has many different forms; in its simplest the prisoners are farmed out in the prison to a manufacturer who ordinarily furnishes material and manufacturing overhead, while the prison provides housing, guards and convict labor. Contract labor has been found to be a menace to prison management because of the unfortunate abuses which invariably accompany it.

Prison-controlled monopolies and prison-managed contracts are in general similar to contract labor except that the state is its own contractor and under this system the dual management and the abuses of the contract shop are avoided.

State use industries differ from state monopolies in that their product is consumed entirely in the market provided through state purchases whereas prison-controlled monopolies and prison contracts ordinarily sell in the open market.

Interstate use is an extension of state use industries which provides for the sale of manufactured goods outside the state but only to other state purchasing authorities. This system is usually based upon an exchange of commodities the production of which is allotted to the various states on the basis of geographical considerations.

Job Analysis of Prison Industries

To those outside the field of prison work the detailing of these considerations may seem irrelevant. I take the position, however, that before we can perfect the organization of prison industries we must be absolutely clear on our premises. Prison industries should not be organized primarily for profit. They should be provided in order to overcome the evil effects of idleness in prisons and to prepare men for economic independence on release. The establishment of prison industries is further conditioned by the numbers and types of prisoners and by definite principles of correctional training. Some industries are wholly out of place because they cannot be manned; others are out of place because they fail to furnish reformatory training or industrial opportunity on release.

In order to approach this problem scientifically it becomes necessary to make an organization analysis of those industries already established in our prisons and a constructive study of other industries which might be established to good advantage. I can make my discussion much more simple if I now present the detailed work of the Department of Institutions and Agencies of the State of New Jersey in reorganizing the industries of the New Jersey State Prison.

New Jersey is fortunate in having its public institutions under central control through a non-partisan board which has removed institutional management as far from politics as is possible or advisable. This board of control operates through a Central Department of Institutions and Agencies which coordinates all institutions in a combination of business and scientific management which is perhaps without equal in this country. The Commissioner of Institutions and Agencies, Dr. Burdette G. Lewis, a man of unusual executive ability, has utilized scientific methods to the utmost in this field. In particular, Dr. Lewis has brought about a complete analysis of the industrial organization of the New Jersey State Prison at Trenton and the New Jersey Reformatory at Rahway. I will confine myself to the work at the former institution.

This survey was conducted by the psychological staff of the Department of Institutions and Agencies offering their technical services to the local institution.[2] (It should be said that at the time of this survey contract labor had been completely abolished and a number of modern trade-vocational industries established in its place. It had not been possible at this time, however, to provide suitable industries for all the prisoners.) The survey was founded on the following premises:

1. All prisoners should have some employment.
2. The character of this employment might be occupational, disciplinary, therapeutic, clerical or trade-vocational in type, but must be corrective in purpose.
3. The specific character of the employment should be determined on the basis of the man's mental, physical, moral and social traits and upon the causes of his criminality and in relation to his probable social and industrial status on release.

With this in mind we first made an examination of all occupations on the basis of administrative organization. In this analysis we established the major groupings mentioned above; namely, maintenance and production with their sub-divisions, household, repair, clerical, food production and manufacturing production. We found a clear-cut separation between the maintenance and production, the former being under the direct management of the prison warden and the latter under the direction of a division of state use industries.

Continuing our survey we charted all major occupations on the basis of trade units under the administrative headings. Under household, for example, we found the cook-house, the barber shop, the engine room, the cell service (wing runners), the laundry, the hospital, and so on. In the repair department we found the usual repair occupations such as carpenters, plumbers, tinsmiths and electricians. On the clerical staff we found clerks, school teachers, librarians, bookkeepers, commissary staff and so on. In the productive industries we found the state use farm, bakery, print shop, tag shop, shoe manufacturing shop and a variety of other well-organized industries. These various trade and occupational units were then rated on a basis of the general requirements of each occupation from the most highly skilled to the least skilled.

Each occupational or trade unit was then analyzed on the basis of departments and job units. In the shoe manufacturing shop for example, there were stock fitting, upper fitting and lasting and finishing departments. In the print shop there were the composing room, the press room and the bindery. In the tag shop there were embossing, varnishing and shipping departments. In each of these departments the job units were listed; for example, in the tag shop there was the embosser, the machinist, the rimmer, the numeral coater, the oven feeder, the packer and so on.

The final step in this survey consisted of itemizing the specific qualifications required for each unit operation in terms of health, physique, intelligence, personality, education, skill and previous experience, or breaking-in time. In accomplishing this final portion of the survey we used a job analysis card so devised as to cover all the job units to the degree in which we were interested, making it possible to itemize the requirements for each job or unit operation by encircling those qualifications which were specific to that job. We also rated each job on a scale of 5 on the basis of the qualifications mentioned above.

From these data we presented a complete chart showing all shop departments arranged from left to right in order of rating merit, with jobs arranged from top to bottom in parallel columns. This gave us a somewhat crude photograph of the entire occupational facilities of the prison with reference to the work thus provided for. We then installed a visible index system showing each job on a separate job specification card giving the mental, physical, temperamental and other requirements.

Assignment of Prisoners

This whole business of job analysis would be futile without corresponding analysis of the qualifications of the men to be assigned to some occupation. Indeed, this analysis grew out of our classification system which revealed the gross inadequacy of traditional rule of thumb and trial and error methods of assigning prisoners to work. This classification system requires that each man entering the prison be examined by a number of specialists: the psychologist, the physician, the psychiatrist, the head teacher, the disciplinary officer, the chaplain and the field investigator or the parole officer. Under the system now in operation at the New Jersey State Prison, reports rendered by each of these examiners from his special point of view are assembled in a classification meeting at which each of the examining specialists is present. The data are combined in a classification summary which places the prisoner in a definite classification group, indicating the causes of his criminality and the various correctional measures, medical, educational, occupational and so on, that seem most appropriate. His industrial placement is then determined by these considerations.

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[2] The present commissioner of Institutions and Agencies, Hon. W. J. Ellis, made the detailed analyses of these industries in collaboration with the writer.

If he is a chance offender of the better class, a man for whom the occupational assignment has only a prophylactic correctional value, he is usually recommended for work designed to maintain a wholesome attitude and retain whatever occupational skill he may already have. His work helps pay for his maintenance and contributes toward his peace of mind while he is serving his time. Such a man is a reformatory problem from the standpoint of prevention rather than cure.

The psychopathic prisoner is usually a case for medical attention. He is therefore assigned to some form of industry of the occupational therapy type. Some industries have a mental hygiene value in that they provide a type of work which ameliorates the unstable or antisocial attitude of the psychopathic prisoner. Other industries often aggravate these abnormal mental types.

The subnormal prisoner is usually recommended for some simple type of routine work whether factory work, unskilled labor or household occupation.

The antisocial prisoner of normal mentality, and those high-grade subnormal or borderline psychopathic prisoners with antisocial tendencies who do not respond to other methods of treatment or training, may be given temporary disciplinary assignment. This is usually a type of work which is unpleasant or which calls for physical exertion. The antisocial class may also be assigned to factory work or other industrial occupation not requiring a great deal of skill.

Any or all of these classes of prisoners may sooner or later be recommended for trade-vocational assignments for the purpose of acquiring occupational or industrial skill. This is particularly appropriate for those prisoners who have no legitimate trade or occupation or who should for one reason or another change their line of work.

In all these types of employment, whether industrial, disciplinary, therapeutic or trade-vocational, constant attention must be paid to inculcating such industrial habits as industry, cheerfulness, willingness, care, speed, cooperation, loyalty and promptness which go so far toward making a man an industrial asset over and above his trade ability.

This system of classification and industrial placement is, of course, not infallible. Mistakes are made; conditions in the industries and occupations are not static; and in particular the prisoner himself changes as time goes on. Consequently we provide for reclassification as a check on a man's progress. One of the purposes of the initial classification is the determination of the minimum requirements to be met by each man before he is to be considered eligible for parole. His industrial or vocational progress is one of these requirements. As the man improves in other ways his industrial placement requires readjustment. The antisocial prisoner might progress from a therapeutic assignment to a vocational or industrial assignment. And so on for other types.

In all these assignments particular attention is paid to the probable employment in which a man can engage upon release. This means that for male prisoners only those industries in which a man can obtain gainful employment in the outside world can be utilized. This requires some study of the social situations to which prisoners may be expected to return, and suggests the desirability of surveying industrial conditions in the outside world. It also means that the parole department must give specific attention to providing employment for a man at the time of his release or insisting that he have of his own initiative some definite job awaiting him. In the case of our trade-vocational industries this problem has been partly solved by tying up with some of the state unions. We guarantee a vocational training program in our industries, under the supervision of representatives of the union and our men completing certain training courses receive union cards and are accepted in good standing in those unions on release.

Incentives in Prison Industries

Even the best prisoners fall far short of the angelic type and very few have sufficient foresight or ambition to take an active part in preparing for a successful parole. The routine of everyday life within the prison heavily overshadows the prospect of release. It is therefore necessary to support such a system with special incentives and to correlate it with other phases of prison management.

This correctional training program and the prisoner's ultimate success on parole are greatly facilitated by making the conditions of employment, training and living so far as possible like conditions in the outside world. The correctional institutions of New Jersey have done much in this direction by providing recreation, physical training, medical and surgical care designed to overcome the artificial differences between the conditions of prison life and conditions in society at large. New Jersey has also found a satisfactory compromise between the slavery of the contract and the vicious effects of idleness by providing vocationalized industries which combine definite instruction with equally definite manufacture, a happy adjustment of part training and part work that reduces the problem of idleness to a minimum and raises industrial efficiency to a maximum.

To make industrial conditions in prison approximate those outside we need to meet a number of conditions:

1. There should be enough jobs or just more than enough jobs to go around.
2. The man who refuses to work should not receive time credited against his sentence while in idleness.
3. In order to get one of the jobs and so avoid the consequences of idleness the prisoner should merit employment on the basis of skill, industry and conduct.
4. In order to hold his job his effort, conduct and work product should meet the requirements of outside employment.
5. There should be enough work in each job to encourage an honest day's work.
6. The prisoner should be paid in money for his work on the basis of quality and quantity. Some of this money should pay for his maintenance, some go to the support of his family, but most of it to the victims of his crime.
7. Beyond a certain point such payments of money might be exchanged for legitimate privileges or for extra good time to be counted against his sentence.
8. He should be expected to improve in his work as does a good workman outside.

Under these conditions a man would leave prison industrially healthy and strong, to resume earning his livelihood under reasonably promising conditions.

Institutions as Laboratories

In formulating this material I have endeavored to confine myself to statements of fact and to my own experience. I should, however, make clear that the program is only an approximation of the ideal as we understand it today. This program is not in complete operation in any prison that I know, but it has reached a high development in the New Jersey State Prison. The degree of its success any of you may judge for yourselves by paying a visit to that institution.

This presentation would be disappointing from my standpoint if it did not make clear to the members of this Society that scientific management is possible in our public institutions just as it is in business. I should be disappointed also if this audience does not feel some concern as citizens and some personal responsibility as individuals for supporting the programs of our public institutions.

The scientific management of our public institutions provides a remarkable opportunity for research which can be carried over into the industrial life of the outside world. In studying prisoners who are under control for twenty-four hours a day, and under conditions which make it possible to understand their individuality, we can learn many lessons for stabilizing employment in business and manufacture. Scientific management requires that the worker be adjusted in and to his employment. He must be given reasonable opportunity for advancement or readjustment so far as his capabilities or industrial conditions permit. The unrest of labor will be greatly diminished when each worker is placed in a job suited to his interests and abilities. This can be accomplished by studying not only the worker or his job but the worker in his job.

And finally, happiness in work is an economic asset to any employer. The human element is the most important single consideration in industrial efficiency. Your managing director has said that "the real management problem is that of inspiring interest, understanding, initiative, effort, precision, and personal effectiveness in cooperative activity." That is the problem in prison industries as well as in the industries of which he was speaking. Our progress in institutional management is advanced by the development of industrial engineering and industrial psychology, and will in turn contribute to these developments. We welcome all possible cooperation with engineers and psychologists.

Nucleus of a Management Library

With Emphasis on Scientific Management

THE literature of management has become so abundant that many individuals and firms are puzzled by the problem of selecting a moderate sized library on management subjects. Stimulated by many inquiries for assistance, the Taylor Society has prepared the following nucleus of a management library. Titles were first selected, tentatively, in the office of the Society and sent to a number of special authorities on the several phases of management. Their responses, in the nature of approvals, rejections or additions, are reflected in this present list. The list as printed thus represents a group judgment.

I. Background

Copley, Frank Barkley, *Frederick W. Taylor*: Harper & Brothers, New York, 1923, 2 vols.

Undoubtedly the most illuminating book on scientific management because it gives an account of the circumstances of its origin and development.

Critical Essays on Scientific Management, Bulletin of the Taylor Society, February, 1925, Vol. X, No. 1, Part II.

A collection of reviews of Copley's "Frederick W. Taylor," each a short discussion of scientific management.

II. Taylor Classics

Taylor, Frederick Winslow, *The Principles of Scientific Management*: Harper & Brothers, New York, 1911, new edition, 1919.

Taylor, Frederick Winslow, *Shop Management*: Harper & Brothers, New York, 1911, new edition, 1919.

The classical expositions of scientific management. There is no essential difference between "The Principles" and "Shop Management"; the former is a simpler statement of the content of the latter; of the two the comprehensive statement is preferable.

Taylor, Frederick Winslow, *A Piece Rate System*: American Society of Mechanical Engineers Transactions, Vol. 28, pp. 31-350, New York, 1906.

The first exposition of scientific management, before fully developed, in connection with discussion of wage systems.

Taylor, Frederick Winslow, *Notes on Belting*: American Society of Mechanical Engineers Transactions, Vol. 15, pp. 204-259, New York, 1893.

The standard simple illustration of important by-product researches in the development of scientific management.

Taylor, Frederick Winslow, *The Art of Cutting Metals*: American Society of Mechanical Engineers, New York, 1912.

The monumental illustration of important by-product researches in the development of scientific management.

III. Elementary Discussions of Management

Dutton, Henry P., *Factory Management,* The Macmillan Co., New York, 1924.

A standard elementary text.

Jones, Edward D., *The Administration of Industrial Enterprises*: Longmans, Green & Co., New York, 1916, revised edition, 1925.

An excellent general treatment of management.

Kimball, Dexter S., *Principles of Industrial Organization*: McGraw-Hill Book Co., New York, 1913, 3rd edition, 1925.

A standard work much used in engineering schools.

Lansburgh, Richard H., *Industrial Management*: John Wiley & Sons, New York, 1923.

An excellent general treatment of works management.

Marshall, Leon C., *Business Administration*: The University of Chicago Press, Chicago, 1921.

A collection of excerpts from standard works.

IV. Scientific Management—General Treatments

Alford, L. P., *Management's Handbook*: The Ronald Press Co., New York, 1924.

The most comprehensive statement under one cover of management in all its phases. Sections 6, 11, 12, 15, 16 and 17 are written from the scientific management point of view.

Amos Tuck School of Administration and Finance, *Addresses and Discussions at the Conference on Scientific Management, October,* 1911: Dartmouth College, Hanover, N. H., 1912.

An illuminating presentation of the nature and meaning of scientific management.

Brandeis, Louis D., *Scientific Management and Railroads*: The Engineering Magazine Co., New York, 1912.

One of the best elementary statements of scientific management in manufacturing. (The last two words of the title are misleading.)

Emerson, Harrington, *Twelve Principles of Efficiency*: The Engineering Magazine Co., New York, 1912, sixth edition, 1924.

A non-technical work which has stimulated interest in management.

Federated American Engineering Society, Committee on Elimination of Waste in Industry, *Waste in Industry*: The McGraw-Hill Book Co., New York, 1921.

A report of a survey of waste in various industries resulting from inefficient management. The standards of measurement applied in the survey show scientific management origin.

Gantt, H. L., *Work, Wages and Profits*: The Engineering Magazine Co., New York, 1910.

Ranks with Taylor's works as a classic; more concerned with human and economic problems but less comprehensive than Taylor's books in statement of technique.

Gilbreth, Frank B., *Primer of Scientific Management*: D. Van Nostrand Co., New York, 1912.

Early simple statement of scientific management.

Hunt, Edward Eyre, *Scientific Management Since Taylor*: The McGraw-Hill Book Co., New York, 1924.

A collection of special articles covering the decade subsequent to Thompson's collection. (See below.) Shows advance of scientific management with respect to general control, industrial relations, etc.

Sheldon, Oliver, *The Philosophy of Management*: Prentice-Hall, Inc., New York, 1923.

The best book discussing management from a philosophic point of view.

Thompson, Clarence Bertrand, *Scientific Management*: Harvard University Press, Cambridge, Mass., 1914.

The best collection of articles on scientific management technique.

Thompson, Clarence Bertrand, *The Theory and Practice of Scientific Management*: Houghton Mifflin Co., Boston, 1917.

Economic and practical aspects of scientific management.

Walker, P. F., *Management Engineering*: The McGraw-Hill Book Co., New York, 1924.

Includes a scientific analysis of the job of establishing an enterprise.

The Annals of the American Academy of Political and Social Science, Philadelphia. *Modern Manufacturing*, Vol. LXXXV, No. 174, 1919. *Science in Modern Industry*, Vol. CXIX, No. 208, 1925.

Related papers by authorities in their respective fields.

V. Application of Scientific Management in Specific Industries

Babcock, George D., *Taylor Principles in Franklin Management*: The Engineering Magazine Co., New York, 1917.

An informing description of a particular application.

Bigelow, Carle M., *Installing Management in Woodworking Plants*: The Engineering Magazine Co., New York, 1920.

Influenced by the scientific management point of view.

Diemer, Hugo, *Factory Organization and Administration*: The McGraw-Hill Book Co., New York, 1910, 4th edition, revised, 1925.

Detailed presentation of machine shop control mechanisms.

Parkhurst, Frederick A., *Applied Methods of Scientific Management*: John Wiley & Sons, New York, 1917.

The most complete description of the technique of scientific management in a particular plant.

Van Deventer, John H., *Handbook of Machine Shop Management*: The McGraw-Hill Book Co., New York, 1915.

A standard reference work influenced by scientific management.

VI. Scientific Management Technique — Special Phases

Day, Charles, *Industrial Plants*: The Engineering Magazine Co., New York, 1911.

Concerned with the adaptation of the plant to the business.

Farquhar, Henry H., *Factory Storeskeeping*: The McGraw-Hill Book Co., New York, 1920.

The best simple comprehensive statement of storeskeeping technique.

Gilbreth, Frank B., *Motion Study*: D. Van Nostrand Co., New York, 1911.

The classical exposition of motion study.

Lichtner, William O., *Planned Control in Manufacturing*: The Ronald Press Co., New York, 1921.

Descriptive of a scientific management method of control.

Lichtner, William O., *Time Study and Job Analysis*: The Ronald Press Co., New York, 1921.

A valuable book on phases indicated by the title.

Merrick, Dwight V., *Time Studies for Rate Setting*: The Engineering Magazine Co., New York, 1921.

The most detailed book on the particular phase.

VII. Office Management

Clark, Wallace, *Shop and Office Forms*: The McGraw-Hill Book Co., New York, 1925.

A collection of shop and office forms showing influence of Gantt technique.

Galloway, Lee, *Office Management*: The Ronald Press Co., New York, 2nd edition, 1919.

An early standard work on office management.

Leffingwell, William Henry, *Office Management: Principles and Practice*: The A. W. Shaw Co., Chicago, 1925.

Latest and most complete book in this special field.

Schulze, J. Wm., *Office Administration*: The McGraw-Hill Book Co., New York, 1919.

An early standard work on office management.

VIII. Purchasing

Dinsmore, J. C., *Purchasing: Principles and Practice*: Prentice-Hall, Inc., New York, 1922.

Twyford, H. B., *Purchasing: Its Economic Aspects and Proper Methods*: D. Van Nostrand Co., New York, 1915, new edition, 1925.

Two standard texts recommended by practical purchasing agents.

IX. Business Policy

Clark, John Maurice, *The Economics of Overhead Costs*: The University of Chicago Press, Chicago, 1923.

A valuable study of overhead costs with especial relation to business policy.

Powell, J. E., *Payment by Results*: Longmans, Green & Co., New York, 1924.

An English discussion and critical evaluation of various methods of payment by results.

Shaw, A. W., *Approach to Business Problems*: Harvard University Press, Cambridge, Mass., 1916.

Penetrating discussion of the background of the problem of general administration.

Thorpe, W. L., *Integration of Industrial Operations*: Census Monograph No. III, U. S. Census, 1924.

The trends of industrial organization in the United States with special reference to centralized operation and industrial integration.

X. Budgetary Control, Forecasting and Regularization of Operations

Barber, Joseph H., *Budgeting to the Business Cycle*: The Ronald Press Co., New York, 1925.

An exposition of Walworth Company methods.

Conference on Unemployment, Washington, D. C., 1921, Committee on Seasonal Operation in the Construction Industries, *Seasonal Operation in the Construction Industries*: The McGraw-Hill Book Co., New York, 1924.

A discussion of the necessity and possibility of all-year-round building.

Conference on Unemployment, Washington, D. C., 1921, Committee on Unemployment and Business Cycles, *Business Cycles and Unemployment,* including an investigation made under the auspices of the National Bureau of Economic Research: The McGraw-Hill Book Co., New York, 1923.

Probably the most important study of the cycle for the business man.

Feldman, H., *The Regularization of Employment,* Harper & Brothers, New York, 1925.

Excellent exposition of scientific management point of view on the problems of regularization.

McKinsey, James O., *Budgetary Control*: The Ronald Press Co., New York, 1922.

A standard general work on budgetary control.

Persons, Foster & Hettinger, *The Problem of Business Forecasting*: Houghton Mifflin Co., Boston, 1924.

A discussion of business forecasting by a group of competent authorities.

XI. Managerial Accounting

Church, A. Hamilton, *Proper Distribution of Expense Burden*: The Engineering Magazine Co., New York, 1913.

Church, A. Hamilton, *Production Factors in Cost Accounting and Works Management*: The Engineering Magazine Co., New York, 1910.

Church, A. Hamilton, *Manufacturing Costs and Accounts*: The McGraw-Hill Book Co., New York, 1917.

These three books have had a significant influence on the development of cost accounting.

Harrison, G. Charter, *Cost Accounting to Aid Production*: The Engineering Magazine Co., New York, 1921.

Approaches the scientific management point of view more nearly than any other work on accounting.

McKinsey, James O., *Managerial Accounting*: The University of Chicago Press, Chicago, 1924.

How accounting and statistics aid management in its control of various departments of the business.

Woods, Clinton E., *Unified Accounting Methods for Industrials*: The Ronald Press Co., New York, 1917.

A good exposition of the job of the industrial engineer with accounting as a practical basis of control.

XII. Financial Management

Lincoln, Edmund Earle, *Applied Business Finance*: The A. W. Shaw Co., Chicago, 1923; 3rd edition, revised, 1925.

Important aspects of corporation finance, investment banking and commercial banking; financial aspects of purchasing, producing and selling goods.

McKinsey, J. S. & Meech, S. P., *Controlling the Finances of a Business*: The Ronald Press Co., New York, 1923.

Everyday problems of internal financial administration in normal operations of a going concern. Scientific management emphasis on determination of capital requirements and control of disbursements.

Montgomery, Robert H., *Financial Handbook*: The Ronald Press Co., New York, 1925.

Standard reference work on financial phases of management.

XIII. Statistical and Graphic Methods

Brinton, Willard C., *Graphic Methods for Presenting Facts*: The Engineering Magazine Co., New York, 1914.

An early non-mathematical handbook of charts for the business man. Contains critical comment on all charts printed.

Clark, Wallace, *The Gantt Chart*: The Ronald Press Co., New York, 1922.

The most highly developed graphical procedure for analysis and control of operations.

Day, Edmund E., *Statistical Analysis*: The Macmillan Co., New York, 1925.

Emphasizes the logic rather than the technique of statistical procedure; the analysis rather than collection and tabulation of statistical material.

Karsten, Karl G., *Charts and Graphs*: Prentice-Hall, Inc., New York, 1923.

Practical suggestions on technique with 500 illustrations. The chapter on the geneology of numbers is especially helpful.

Mills, Frederick C., *Statistical Methods*: Henry Holt & Co., New York, 1924.

Methods of combining and analyzing quantitative observations in the field of economics and business.

Secrist, Horace, *Introduction to Statistical Methods*: The Macmillan Co., New York, 1917, revised edition, 1925.

A compendium of statistical practices with emphasis on the principles back of numerical calculation and manipulation.

XIV. Sales Management

Cherington, Paul T., *Elements of Marketing*: The Macmillan Co., New York, 1920.

Emphasizes the functions behind marketing mechanisms.

Copeland, Melvin T., *Principles of Merchandising*: The A. W. Shaw Co., Chicago, 1924.

Discusses problems of marketing different classes of goods; sound principles of merchandising under competitive conditions.

Hall, S. Rowland, *Handbook of Sales Management*: The McGraw-Hill Book Co., New York, 1924.

A review of modern sales practices and methods illustrated by the experience of representative selling organizations.

Hilgert, Joseph R., *Cost Accounting for Sales*: The Ronald Press Co., New York, 1926.

Emphasizes the relation between sales management and accounts; the dependence of sales policies on budgets.

Kenagy, H. G. & Yoakum, C. S., *Selection and Training of Salesmen*: The McGraw-Hill Book Co., New York, 1925.

A summary of research on problems of sales personnel carried on during 1916-24 by Carnegie Institute of Technology Bureau of Business Research.

Lyon, Leverett S., *Salesmen in Marketing Strategy*: The Macmillan Co., New York, 1926.

Covers the preparation of a sales force; planning the operations of a sales force; operating the sales force; organization for salesmen management and control.

Russell, F. A., *Management of the Sales Organization*: The McGraw-Hill Book Co., New York, 1922.

Elementary study of the relations of sales manager and traveling salesman; selection, training, assignment of task and reward.

Snow, A. J., *Psychology in Business Relations*: The A. W. Shaw Co., Chicago, 1925.

Concerned primarily with the psychology of the consumer, the market and selling methods.

Strong, Edward Kellogg, *Psychology of Selling and Advertising*: The A. W. Shaw Co., Chicago, 1925.

The psychology of selling to make customers instead of sales.

Tosdal, Harry R., *Principles of Personal Selling*: The A. W. Shaw Co., Chicago, 1925.

A comprehensive scientific study of the selling process, unique in its understanding of the contributions of present-day psychology.

White, Percival, *Market Analysis*: The McGraw-Hill Book Co., New York, 1921, revised edition, 1925.

The technique of market analysis research: a guide to the scientific analysis and organization of markets.

Annals of the American Academy of Political and Social Science, Philadelphia. *Scientific Distribution, Modern Selling*: Vol. CXV, No. 204, 1924. *Psychology in Business*: Vol. CX, No. 199, 1923.

XV. Retail Store Management

Hahn, Lew and White, Percival: *The Merchant's Manual*: McGraw-Hill Book Co., New York, 1924.

Considers all phases of retail—particularly department store—management.

Mazur, Paul M., *Principles of Organization Applied to the Department Store*: Harper & Brothers, New York, 1926. (In press.)

A study and appraisal of different methods of executive organization in department stores.

Nystrom, Paul H., *Economics of Retailing*: The Ronald Press Co., New York, 1915, 2nd edition, 1919.

Factual material on retail distribution, indicating the broad lines of retailing progress.

Nystrom, Paul H., *Retail Selling and Store Management*: International Textbook Co., Scranton, Pa., 1924.

A more practical discussion of store problems.

XVI. Personnel Administration and Labor Policy

Blum, Solomon, *Labor Economics*: Henry Holt & Co., New York, 1925.

Thoroughgoing discussion of trade union movement, unemployment, business cycle, socialist movement, labor legislation, etc.

Burton, Ernest Richmond, *Employee Representation*: The Williams & Wilkins Co., Baltimore, 1926.

The most informing study of this particular phase.

Commons, John R., *Industrial Goodwill*: The McGraw-Hill Book Co., New York, 1919.

The best book on the fundamental aspects of industrial relations.

Commons, John R., *Industrial Government*: The Macmillan Co., New York, 1921.

Report of experiments in eighteen—chiefly scientific management—plants, with interpretive chapters giving valuable conclusions.

Fitch, John A., *The Causes of Industrial Unrest*: Harper & Brothers, New York, 1924.

A perspicacious discussion of labor problems based on 15 years first hand investigation of attitudes of labor and capital.

Foerster, Robert F. & Dietel, Else H., *Employee Stock Ownership in the United States*: Princeton University Press, Princeton, N. J., 1926.

The most informing study of this particular phase.

Hoopingarner, Dwight L., *Labor Relations in Industry*: The A. W. Shaw Co., Chicago, 1925.

A recent important work on this subject.

Hoxie, Robert Franklin, *Scientific Management and Labor*: D. Appleton & Co., New York, 1915.

Important early criticism from labor point of view.

James, Gorton, Dennison, Henry S., Gay, Edwin T., Kendall, Henry P. and Burritt, Arthur W., *Profit-Sharing and Stock Ownership for Employees*: Harper & Brothers, New York, 1926.

Revision of a ten-year old authority on Profit-Sharing, reflecting developments of the past decade.

Link, H. C., *Education and Industry*: The Macmillan Co., New York, 1923.

Considers industrial education as a social problem and discusses such special problems as trade schools, vestibule schools, foreman's training, etc.

Metcalf, Henry C., *Scientific Foundations of Business Administration*: The Williams and Wilkins Co., Baltimore, 1926.

Collected addresses on biological, psychological, economic and philosophical phases of management and on the theory and practice of scientific management.

Rowntree, B. Seebohm, *The Human Factor in Business*: Longmans, Green & Co., New York, 1921, 2nd edition, 1925.

The point of view of enlightened progressive British Management.

Schell, Erwin H., *Technique of Executive Control*: The McGraw-Hill Book Co., New York, 1924, new edition, 1926.

A detailed discussion of effective executive control.

Scott, Walter Dill and Clothier, Robert C., *Personnel Management*: The A. W. Shaw Co., Chicago, 1923.

Especial emphasis on the development of intelligence and other tests.

Tead, Ordway and Metcalf, Henry C., *Personnel Administration*: The McGraw-Hill Book Co., New York, 1920, revised edition, 1926.

The best general treatment of the work and problems of personnel management.

Webb, Sidney, *The Works Manager Today*: Longmans, Green & Co., New York, 1917.

Good discussion from the point of view of intelligence labor leadership.

Williams, Whiting, *What's on the Worker's Mind*: Chas. Scribner & Sons, New York, 1921.

The human side of management and employment problems.

The Annals of the American Academy of Political and Social Science, Philadelphia. *Personnel and Employment Problems,* Vol. LXV, No. 154, 1916. *Stabilizing Industrial Employment,* Vol. LXXI, No. 160, 1917. *Labor Management and Production,* Vol. XCI, No. 180, 1920.

XVII. Psychologic Background of Management

Dewey, John, *Human Nature and Conduct*: Henry Holt & Co., New York, 1922.

Follett, Mary P., *Creative Experience*: Longmans, Green & Co., New York, 1924.

Two works throwing light on motives and conduct in social and industrial relations.

Gilbreth, Lillian M., *The Psychology of Management*: Sturgis & Walton (now Macmillan), New York, 1914.

An early work outlining the field of industrial psychology.

James, William, *Talks to Teachers on Psychology*: Henry Holt & Co., New York, 1899.

For an understanding of the habit side of industrial problems.

Kornhauser, Arthur W. and Kingsbury, Forrest A., *Psychological Tests in Business*: The University of Chicago Press, Chicago, 1924.

A sane, brief presentation of methods of constructing and using psychological tests in business.

Link, Henry C., *Employment Psychology*: The Macmillan Co., New York, 1919.

Standard work on subject matter of title.

McClure, Matthew Thompson, *How to Think in Business*: The McGraw-Hill Book Co., New York, 1923.

A valuable elementary exposition of the thinking process.

Martin, E. D., *The Behavior of Crowds*: Harper & Brothers, New York, 1920.

The psychology of group relationships.

Martin, E. D., *Lectures on Psychology*: The W. W. Norton Co., New York, 1925.

A general, broad understanding of the various schools of psychology and their application in the field of industry.

Overstreet, H. A., *Influencing Human Behavior*: The W. W. Norton Co., New York, 1925.

An interpretation of recent psychological thought in terms suggestive to the executive.

Tansley, Arthur George, *The New Psychology and its Relation to Life*: Dodd, Mead & Co., New York, revised edition, 1922.

A well-balanced statement of psychology from the point of view of the followers of the Freudian school.

XVIII. Economic Background of Management

Clark, John Maurice, *The Social Control of Business*: The University of Chicago Press, Chicago, 1926.

A discussion of the social-control factors of the business executive's environment.

Clay, Henry, *Economics, an Introduction for the General Reader*: The Macmillan Co., London and New York, 1916; 2nd edition, 1918.

A readable English statement for the layman.

Edie, Lionel D., *Economics*: *Principles and Problems*: Thomas Y. Crowell Co., New York, 1926.

Emphasizes modern economic developments, considering economics as a growing body of organized knowledge concerning one aspect of human behavior.

Haney, Lewis H., *A History of Economic Thought*: The Macmillan Co., New York, 1911.

A standard text.

Marshall, Leon C., *Readings in Industrial Society*: The University of Chicago Press, Chicago, 1919.

A well balanced collection of authoritative articles.

Taussig, F. W., *Principles of Economics*: The Macmillan Co., New York, 1921.

The standard work by an American economist.

Van Metre, T. W., *Economic History of the United States*: Henry Holt & Co., New York, 1921.

A standard history text.

XIX. Periodicals—Current Discussions and Cases

- *Annals of the American Academy of Political and Social Science,* Philadelphia.
- *Bulletin of The Taylor Society,* New York.
- *Factory,* The A. W. Shaw Co., Chicago.
- *Harvard Business Review,* The A. W. Shaw Co., Chicago.
- *Industrial Management,* The Engineering Magazine Co., New York.
- *Industrial Psychology,* Hamilton, N. Y.
- *The Journal of the National Institute of Industrial Psychology,* London.
- *Journal of Personnel Research,* Personnel Research Federation, New York.
- *Management Review,* The American Management Association, New York.
- *Manufacturing Industries,* The Ronald Press Co., New York.
- *N. A. C. A. Bulletin,* The National Association of Cost Accountants, New York.
- *Printers Ink,* New York.
- *Sales Management,* Chicago.
- *S. I. E. Bulletin,* Society of Industrial Engineers, Chicago.

XX. Bibliography

- Brown, Walter Vail, *Scientific Management, A List of References in the New York Public Library,* New York, 1917.
- Cannons, H. G. T., *Bibliography of Industrial Efficiency and Factory Management*: George Routledge & Sons, Limited, London, 1920. (E. P. Dutton & Co., New York.)
- Rossi, William H. and Rossi, Diana I. Powers, *Personnel Administration: A Bibliography*: The Williams & Wilkins Company, Baltimore, 1925.
- *Industrial Arts Index.* H. W. Wilson Co., New York, Published eight times a year and cumulatively.
- *Readers' Guide to Periodical Literature*: H. W. Wilson Co., New York. Published ten times a year and cumulatively.

This bibliography of management subjects has been reprinted as a separate pamphlet. Single copies may be secured from the office of the Society for fifteen cents; ten or more copies at ten cents each.

The Banker's Interest in Good Management[1]

By Rumsey W. Scott[2]

IN 1919 and 1920 a number of the larger banks realized the necessity, on account of the strained industrial situation existing at that time, of establishing a closer contact with borrowers, not only to become better acquainted with their customers, but to secure, first-hand, more accurate knowledge as to their credit rating and also to determine as far as possible, the future outlook both for the industry and for the particular corporation whose record was under review.

Several of the larger New York banks created what have been called Industrial Departments for the establishment of this contact with their customers. In 1920 I became connected with one of the well-known national banks in New York, as the head of its Industrial Department, and later as Vice-President. In every instance contact with the borrower showed the importance of management, and further, that successsful management was largely determined by leadership. Most of the successful enterprises owed their early success to the energy, sound policies, far-sightedness, and good judgment of the founder, or his competent successors.

One of the essentials of successful leadership was reflected in the training of men to assume positions of responsibility in the event that the leader had to give up active management, thus assuring that a trained and competent successor was available to carry out the policies and to continue the work that had built up the business.

A very important factor in management is, in my opinion, keeping the organization in proper balance—equally strong in finance, sales, production and personnel. While a competent management is reflected in profit and loss statements, it is a factor that is not shown on a balance sheet, and yet it is one of the most, if not *the* most important asset of the business.

For several years following the World War there was a great revival in business, and while timely warnings were given by the Federal Reserve Banks and leading bankers, few men realized in the early part of 1920 that they were facing one of the greatest industrial up-sets that has taken place in this country. Had it not been for the Federal Reserve banking system and for the strength of our banks there would no doubt have resulted the most severe panic this country ever faced.

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[1] Remarks at a meeting of the Taylor Society, New York, December 4, 1925.

[2] President American Cable Company, New York.

Taking advantage of the warnings, many of the more conservative and far-sighted executives immediately began to get their houses in order, to liquidate excessive inventories and to reduce expenses. Some immediately began to effect economies of production which carried them successfully through 1921, 1922 and 1923—the years of rehabilitation.

Many others had made excessive commitments, had top-heavy inventories and when they were forced to liquidate, cancellations were started which upset business so that many firms suffered losses which they were unable to bear. At the time in question I was in contact with organizations in many lines, investigating their position in the industry, their financial status and management. There were some which showed excellent current ratios, probably as high as three or four to one, but when a close investigation was made, it was found that there was a shortage of working capital due to slow collections, and with excessive high-priced inventories they had to liquidate at great loss. In some instances this depleted their working capital to such an extent that they could not carry on. Many were forced into the hands of bankers or creditors' committees and some into receivership. After careful review by the bankers, those who were engaged in a stable industry, had good earnings up to the time of their getting into difficulties and who, investigation showed, had sound management, were able to secure additional working capital. This saved many industrials. The chief asset of those companies was management.

It was my misfortune to sit by the bedside of many who passed out at that time and I would say that the majority of them failed through their expansion, their lack of sound policy and competent management. There was never a time when management so greatly needed the loyal support of the personnel as at the time of rehabilitation. Going through the severe trials of reconstruction brought about a closer relationship than ever before existed between the principal executives, the key-men of the management and the personnel throughout the organization.

In May, 1920, it was my privilege to read a paper at a meeting of the Chamber of Commerce of the United States, at Atlantic City, on increasing production, mainly by means of improved methods and the more extensive use of labor conserving machinery. At that time there was a shortage of from four to four and one-half million workers in this country. It was a question as to how this shortage was to be made up. Everything had been going along so merrily that few realized the impending danger. When the upset came, it was not so much a matter of making up a labor shortage as of finding methods of reducing labor costs and of continuing business at a volume that could keep the labor on hand employed, and above all, if possible, of maintaining existing wage scales.

The rapid introduction of modern and more efficient machinery and improved methods has resulted in tremendous economies, and is, I believe, one of the principal factors in our quick rehabilitation. The increased use of power and machinery, and the elimination of waste has been so great as to enable us to continue the high scale of wages. There probably has never been a time when the margin between living cost and wage return has been as favorable as it is today. This has increased the purchasing power of a large proportion of our population.

While we may look back upon the several years of rehabilitation as having been disastrous to many, I should like to hazard the forecast that ten years from now we shall look back upon that time with sorrow for many, but with the realization that out of the ashes of destruction we have built a better and more enduring structure and that the loss has been more than made good.

In my contact with executives, I find that they are getting away from the old notion of taking things for granted, of determining their policies by "hunches" and by past experience. They are now analyzing accurately and in many cases scientifically, in order to determine their position in every department. They are looking forward and planning intelligently.

My contact with many of the successful men in industry convinced me that it was the far-sighted executive who achieved outstanding success: the one who was able to take stock of his own house, and of the industry in which he was engaged, and above all things to look ahead, to plan and strengthen the organization and secure the enthusiastic cooperation and support of his entire personnel.

A balance sheet may show the present financial position of an industrial. Profit and loss statements running back a few years will show what they have accomplished. What the bankers are interested in is the capacity of the borrower. How are they planning their future operations and control? I think we are all familiar with budgetary control (I may say very much more familiar with it than we were three or four years ago). In many cases as bankers we asked for a forward estimate of receipts and disbursements to determine, if possible, whether the borrower could liquidate its indebtedness as agreed. It was possible in many cases to judge the knowledge and capacity of the management by their forecast and plans for future operations and by the budget they set up.

I do not see how it is possible for an executive to control the operations of an enterprise without a definite plan and without a complete budget. In my opinion the main advantage of budgetary control lies in the fact that it provides a means for tying together the various departments of the organization. It provides an incentive for the heads of departments. It sets a mark which shows the ability to plan and execute. I have gone so far in my own organization as to set "bogies." By this I mean, that after receiving forecasts of sales and of production based on experience and upon careful estimate as to future operations, we indicate a goal that we would like sales executives and salesmen, production superintendents and workmen, to reach, in volume and in costs. This has proved to be a stimulus, has brought about better team-play and closer cooperation and has provided a better means for determining rewards for jobs well done.

It is believed that there is another method of bringing about a better understanding as to the means to be provided for increasing earnings and for controlling the allocation of funds and the determination of costs; this is by the division of the "sales dollar." Such a division affords also a ready means for departmental control and the determination of departmental or individual performance. Past records show how much of the sales dollar was expended for materials, productive labor, factory overhead and improved equipment. This gives to the plant a certain division of the dollar. Experience also shows the amount expended for sales, administrative and general expenses, the amount earned on the capital investment, amount paid in dividends, interest, etc.; and the amount added to surplus. This gives a close and accurate division of expenditures which is very advantageous in painting the picture of the next year's operations, and provides a common meeting ground for the principal executives and for the control of their departments.

An Interpretation of a German View of Scientific Management[1]

By Harry Arthur Hopf[2]

TEN or more years ago the reviewer had occasion to make a thorough study of the French and German literature of business. He was amazed, at the time, at the paucity of works on the subject in both languages, but more particularly in German, for, in view of the tremendous output of literature in all departments of human knowledge which is characteristic of German practice both before and after the Great War, it seemed astonishing that so little had been written about a field which the German talent for organization had long been exploiting with extraordinary success.

In speculating concerning the causes of this dearth of literary productivity, one wonders to what extent native secretiveness, fostered by highly competitive conditions, may be held responsible. Only those who actually lived in Germany prior to a decade ago can have any appreciation of the absurd lengths to which secrecy concerning business—and for that matter, most other affairs—was universally carried and of the extreme difficulties entailed in attempting to penetrate anywhere the artificial walls with which business and industry were surrounded.

Perhaps another cause may be traced to the fact that until the great collapse of 1918, the Germans, as a nation, thought largely in terms of materialism, machinery and mechanics; such a concept as human incentives was still far beyond the boundaries of their practice or philosophy. What was there, then, to write about, and who dared to take the initiative in publishing valuable information concerning business which might inure to the benefit of a formidable competitor?

How different is the situation today! Instead of a handful of books, there are now literally hundreds in existence in Germany, treating of all phases of business and especially of scientific management with its many ramifications. Furthermore, there are a number of well-edited periodicals in the field, and each year sees a large increase in the output of works on business and business management.

In accounting for this change, we must recognize as one of the important influences the fact that during and after the Great War, Taylor's work and his philosophy became widely known in Germany and the principles of scientific management were soon accepted as sound and applicable to German conditions. But another and even more important consideration undoubtedly lay at the base of the concentration of human thought upon scientific management, and, curiously enough, this comes to expression in the very first paragraph of the introduction, by Dr. W. Hellmuth, to the book which is the subject of this review. Freely translated, one reads the following passage:

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[1] A review of "Arbeitsvorbereitung" by Eduard Michel, V. D. I. Verlag, Berlin; pp. xvi, 310.

[2] Senior Member, H. A. Hopf and Company, Management Engineers, New York.

> Formerly a rich country with almost inexhaustible sources of raw materials, and now limited purely to labor as its chief productive asset, Germany must exert herself to the utmost to exploit this asset as advantageously as possible. Far-seeing institutions have recognized this and have found ways and means to regain their former positions in the markets of the world.

Throughout Germany today the slogan in industry is: "Die Arbeit muss billiger und einfacher gemacht werden." Realization of the acute need for lowering costs of production and for simplifying industrial methods and processes has induced German industry to absorb with avidity the substance of scientific management, interpreted and adapted to German conditions by such students as Miss Irene Witte, who have made thoroughgoing studies of the underlying principles and technique under American engineers, and by others such as the present author, Mr. Eduard Michel, Consulting Engineer, who acquired knowledge at long range through the medium of the standard works of American authorities and have tested it in actual application to German conditions.

A review of Michel's treatise, "Arbeitsvorbereitung," (literally, "Work Preparation," or, in a free translation of the full title, "Planning as a Means of Lowering Production Costs") may logically begin with an examination of the foreword, as it is here that we may expect to find disclosed a statement of the author's point of view or philosophy. We are not disappointed, for with commendable breadth of view and inclusive grasp of the important fundamentals, which of course have long since been recognized and accepted in this country, Michel proceeds to group in succinct form the chief tenets of a philosophy that cannot fail to meet with substantial endorsement by American readers, whether or not German industrialists may be led to see it in the same light.

In speaking of the spirit of leadership and the will to do, Michel points out the need for overcoming many conflicting elements which exist under present conditions. He insists that the necessary interplay between men and machinery imposes obstacles to the profitable conduct of industrial establishments, and that the solution of the problem is not to be found in the realm of the physical so much as in the successful answering of the question: "What is needed to produce the harmonious functioning of the invisible threads which pass pendulum-fashion between control and execution and to weave the whole into organic unity?"

In his comment on this question, Michel emphasizes the fact that authoritative analysis will disclose the influence of personal traits, among which he stresses habit, prejudice and pride, on operating conditions and results. He takes the position that recognition of the new order of things, that is, scientific management, can come only if in place of former points of view and habits, one is willing to recognize and concede that employees, and in particular workmen, are not lifeless machines but human beings, and that the greatest results can be achieved only if they can be brought together in organized endeavor "unter Wahrung ihrer Persönlichkeit" (without suppressing their personalities).

He adds that in any living organism no one member can in the long run remain an opponent of the other; he therefore argues for the wiping out of class distinctions and for the strengthening of a feeling of solidarity between all those who are laboring shoulder to shoulder in a given industrial enterprise, as among the chief objectives of progressive management.

Michel concedes that the task of securing unity of interests and action in German industry through the means of organization still represents virgin soil, and that the introduction of modern principles, which has been retarded in many respects, is possible only where the approach is made carefully and to a limited extent. Inclusive and thorough application of principles of organization must be made gradually and cannot be achieved until management has recognized its responsibility to the full and has learned to master the scientific means placed at its disposal.

The author points out that the tendency has developed in German industrial enterprises, particularly where the training of those in responsible authority has taken a commercial direction, to neglect planning in favor of cost accounting. He quite correctly states that while cost finding systems may be relied upon to yield information concerning current accomplishments, they rarely permit of comparison between these and the highest possible standards of attainment and they fail completely to be of any service when put to the test of acting as aids in judging performance. Only such cost finding systems as may be adjusted to the requirements of scientific management can in the long run be expected to survive.

In concluding his foreword, the author emphasizes that his treatise is based upon actual experience and is intended to be a practical guide to forward-looking industrial enterprises desirous of benefiting by the application of principles of scientific management. Throughout the book he refers to this purpose and points out that in practice scientific management has come to be generally recognized as tantamount to centralized planning of work, the typical characteristic of the form of organization advocated by him.

So much for Michel's background. Space limitations prohibit even the most cursory discussion of the contents of the thirteen chapters into which the book is divided, so the reviewer must content himself with certain general observations supplemented by brief reference to the topics treated by the author.

In a painstakingly careful and thorough manner, Michel has brought together in his book the main features of scientific management, and has endeavored to supply, by means of a wealth of material drawn from various industries and supported by scores of illustrations, a picture of how management may be made to function effectively. His work is neither a text book nor an original scientific investigation, but it is something more than a book of reference, as it has been termed by one German critic.

The book deals largely with American principles and practices, but these have been so thoroughly absorbed in their application to specific German industrial activities, and the numerous exhibits scattered throughout the text are expressed so completely *à la façon allemande,* that it is hard to believe that we are dealing with something of other than strictly German origin. Michel has evidently brought to bear upon the writing of the book a wide, practical experience in dealing with problems of scientific management in Germany, and he has fortified this with a natural or acquired talent for thinking in terms of organization. This is all the more to be commended, for, in the opinion of the reviewer, it is not unreasonable to suppose that many a German author in handling the subject of scientific management might well have been led astray through national characteristics and allowed himself to embrace the form rather than the substance.

In presenting his material to the reader, Michel first discusses at length the importance of planning in the scheme of scientific management; then he devotes a chapter to a description of the records and activities that are involved in the handling of orders, the first step in the process of production. His faith in the efficacy of symbols induces him to dwell in the next chapter upon decimal classification, economics, graphic presentation and punched cards for statistical purposes. Then he branches out into a detailed presentation of principles and practices of receiving and storing, accompanied by numerous illustrations of store room arrangement and flow of work.

Following this, the manufacturing order and its various ramifications through the planning department are described at length, thus leading naturally into a discussion of methods of distribution of work and the objectives to be accomplished thereby. This section of the book, because it is most intimately related to the author's main thesis, is perhaps the most important and certainly the most profusely illustrated part. Practically every other page of the sixty comprising the section is devoted to the reproduction of some form, diagram or photograph of pertinent character, and we must really admire the wealth of information conveyed and the excellence of the printer's work. Pervading the presentation of the examples of German practice is a quality of thoroughness and attention to detail that makes one wonder at the amount of labor and care involved. Certainly we could not attempt to match it on any large scale in this country. Life is too short!

In rapid succession the author then deals with problems having to do with rate setting, determination of production times, various piece work methods and, naturally, the factors of time and motion studies which underlie all of these. This particular chapter is relatively brief, due undoubtedly to the fact that in a previously published book the author has treated exhaustively of this phase of scientific management.

The final chapters of the book relate to the equipment of the planning department and the procedure of work, and cover also such topics as scheduling, delivery, functional control, inspection, the preparation of payrolls, standard practice instructions and the elements of cost accounting.

In the concluding chapter the author speaks of the progress made both in Germany and in other countries with scientific management, and he emphasizes particularly the advantages which were possessed by France during the Great War in having American organizers at the disposal of her industrial apparatus.

The entire work is pervaded by a pronounced sociological point of view, leading to the assumption that the author regards scientific management as a means to an end and finds its justification in a recognition of its value in promoting the common good.

This review, in justice to the author, cannot be concluded without a brief reference to certain criticisms, which have been made in scientific circles, of the use by him of American material without giving sufficient credit to his sources. A judicial study of this criticism by the reviewer fails to find any adequate warrant therefor. The name of Taylor is frequently mentioned and references are also made to Hathaway, Gilbreth and other names of importance in the history of scientific management. The majority of illustrations in the book are, on the author's own statement, original with him; besides, in over one hundred and sixty footnotes, he makes copious references to the work of others. His case, therefore, may well rest upon the general proposition that scientific management is now so thoroughly well-known and established in Germany that, while its debt to the American pioneers is undoubted and real, it has already produced, on its own account, a record of contributions to the progress of the movement.

One can easily understand that since the author's experience has been developed mainly in the decade following Taylor's death, and scientific management as understood today is the product of many minds rather than of one, no matter how eminent, he was not under any particular compulsion to give special credit to Taylor. By failing to give such recognition, he of course detracts in no manner from the fame of the father of scientific management. It would, however, be a gracious act on his part to include in a subsequent edition of the book some reference to the lasting influence of Taylor's work on all students in the field who come after him.

Reverting to the book, the reviewer regrets that Michel did not take pains to have the English topical index, which is a novel feature, prepared by someone thoroughly conversant with that language. Had he done this, he would have produced something of value to those not acquainted with the German language. As it is, the index is worse than useless. Even a high-school student in Germany should have been able to translate "Instandhaltung" as "maintenance" instead of "preventing repairs"; "Flusslauf" as "flow of work" instead of "course of the river"; "Bezugsquelle" as "source of supply" instead of "address for purchasing"; "Betriebsunkosten" as "operating expenses" instead of "auxiliary expence" (sic); "Oberbegriff" as "major classification" instead of "super-conception." Many other examples could be given of what constitutes a minor though rather serious blemish in an otherwise excellent book and a fine example of the printer's art.

Policies of Organized Labor[1]

By Florence C. Thorne[2]

"We need it stated in most emphatic terms that trade unionism is a constructive force designed to build up industry for the benefit of all the people," writes Sir Ernest Benn in "If I Were A Labour Leader." Under this whimsical title the author of this little volume, which appeared so briskly on the heels of the General Strike, devises an opportunity to talk man to man with wage earners whose leaders had led them to a losing fight. Because every labor leader must have a union card, Sir Ernest proposes a union with the symbolic name, "Union of Good Intentions," which gives him the necessary credential.

The strike background gives unusual interest to Sir Ernest's proposals "as a labor leader." There are two outstanding features in his program: insistence that fundamental in the problem of promoting the welfare of the whole nation is greater efficiency in production and that this end can only be reached when all concerned apply their collective intelligence.

The basic difficulty with British labor policies he attributes to the "attempt to mix up industrial and political questions." He says:

> The real cause of the general strike is only to be found when we examine the relationship of Trade Unionism to Socialism and to politics generally. The blame rests on those who for years have been preaching political action, many of them knowing full well that they were aiming at the destruction of the British constitution and not saying so, others not having the brains to know what they were doing and others, again, boldly proclaiming that they were out to found a new system of government. All these people, whether on the right or the left, it does not matter, who have advocated direct or political action, have their share of blame for the general strike.

Thinking that the problems of the workers could be settled by the ballot contributed to a "muddle-headed general impression that fighting is the thing" or "a manifestation of the military spirit in the industrial sphere." Politics constantly plays one force against another. No problem can be solved by force. After the fighting is done, the need for finding the facts has not decreased.

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[1] A review of "If I Were a Labour Leader," by Sir Ernest J. P. Benn, Charles Scribner's Sons, New York, 1926; pp. 136.

[2] American Federation of Labor, Washington, D. C.

To get labor out of the morass and turned toward a constructive program, he suggests:

> If we could announce to the world today that our motto is "Service" and we proceeded to prove it, we could transform the surface of the earth, and poverty would fly like chaff before the wind.

He finds that the major problems with which trade unions must deal are in the industrial field. Instead of pottering around parliaments, he urges the labor leader to concentrate his activities in the problems of the machine shops and the men employed in them, "for industries can do more to abolish poverty than parliaments." "Wealth and poverty are not questions of money. They concern things," says Sir Ernest with equal emphasis.

His advice is in line with the declaration of the American Federation of Labor at its 1925 convention:

> We hold that the best interests of wage earners as well as the whole social group are served by increasing production in quality as well as quantity and by high wage standards which assure sustained purchasing power to the workers and, therefore, higher national standards for the environment in which they live and the means to enjoy cultural opportunities.

Sir Ernest points out that wage earners are consumers as well as workers and that their interests as well as the interests of the general public turn on increased production. He finds in increased production the real sanction of the miners' slogan, "Not a penny off wages, not a minute on hours." Statistical research is the tool through which Sir Ernest expects industry to find economies out of which to pay increased wages. Better methods and better knowledge will prove more fruitful sources of better wages than shaving employers' profits, he thinks.

These principles he recommends to labor leaders:

> Have regard for mutual rights and interests.
> Reject Socialism.
> Place primary emphasis on raising wages and shortening hours.
> Use trade union pressure on candidates instead of forming a labor party.
> Inculcate a spirit of good will.

For the higher type of trade unions that would result from the application of these policies, Sir Ernest recommends that each union establish a competent research bureau "staffed by business people possessing experience of markets, people who want to get on with the job and not to found new systems of society." This bureau should advise as to wages to be paid, thus lifting this question from the field of contest to one of fact; it would also be a protection against accountants or bankers who confuse the facts of production by their "bloody bookkeeping." He recommends keeping a card index of employers discriminating between the sheep and the goats instead of fighting all as enemies and seeking through cooperation to promote the best interests of both employers and employees.

He urges trade unionists to take more interest in the current problems of the industrial machine, such as taxation, relation of science to industry and education, and to use their trade unions to produce wages and prosperity. And, finally, he would not discard the strike; he would use it only against the unfair employer.

Notable is the valuation which Sir Ernest places upon American trade union methods and achievements. American labor's program is so different from that of British labor that undiscriminating students have frequently made a sorry mess of comparative interpretations. American labor has steadfastly stuck to the task of increasing wages and shortening hours, not because it is materialistic or without vision, but because it believes that, these things gained, steadily increasing opportunity for growth and a better life would follow from them. Because American labor sees that higher wages mean no permanent gain without increased production, the foundation is laid for a real partnership between management and labor in the business of production.

Though we can sympathize with Sir Ernest's profound distrust of the present technique of politics, it seems a bit hasty to conclude that no good can come from that source. Is it probable that after the rule of intelligence controls the economic field the main reason for political manipulation will be removed and that it will be possible to introduce there also fact finding agencies that will enable political agents to work with a surer grasp?

One missed from Sir Ernest's program as a labor leader a definite statement of the distinctive functions of management and the obligation to do its part in finding economies and better methods of production. Primary responsibility for the research and statistical service necessary to direct production must rest upon management, while labor contributes from practical work experience.

Sir Ernest's leadership concerns itself more with finding the technique that would release the spiritual forces of those who work than with consideration of that power itself. Any labor leader, regardless of his capacity for study or technical equipment, will find himself confronting an undertaking of overwhelming discouragements if he does not grasp the spiritual nature of all creative work and find sustaining strength in a great passion for bettering men's lives.

It is interesting to note that speakers in the British Trade Union Congress now meeting at Bournemouth confirm Sir Ernest's condemnation of the General Strike as useless and futile. Not all agree that it was illegal and revolutionary.

Reviews

Industry and Civilization. By C. Delisle Burns, The Macmillan Company, London and New York, 1925, pages 278.

The objective of this book cannot be better stated than in the author's own language: "Increasing a knowledge of moral philosophy, and correcting some of the traditional moral assumptions of economics." The book is a richly suggestive survey and evaluation of the moral influences in economic life. Throughout his argument the author assumes "that the Greek conception of excellence is fundamentally sounder than the English conception of virtue."

Industrial reform has developed the mentality of the worker. Industrial psychology is, however, still too much restricted to mechanical processes. It overlooks the truth that self-expression is a psychic fact, which underlies the desire for acquisition and the fear of starvation. The mental outlook of the organizers and owners of capital is quite as important as that of the manual workers in explaining the moral standards operative in industry. Industrial psychology would present a far more adequate view of its scope and contribute basic additional data for the ethics of industry if it included investigations of business habits and of the group or class mind in economic activity.

The industrial organization is viewed by the author as a unit whose broad principle is adequate service for civilized life. Yet, in actual industrial practice this principle is not applied, for "the vast majority of those engaged in industry do not have and can not acquire the opportunities for developing their abilities." Thus the moral progress of industry requires that the business man and the worker should both normally think more of the quality of the service and the development of the servant than of money values.

For the purpose of the readers of this Bulletin, the most significant chapters of the book are, perhaps, the following: The Workers in Industry; The Organisers; The Owners of Capital; The Consumers. The class consciousness of these four main types in industry is analyzed.

In these four chapters the author particularly emphasizes the importance of functional interdependence. "The claim for control or a share in administrative power, if it is to be morally justified, must imply a claim to serve more adequately and not primarily a claim to benefit. The democratic 'operation' of industry is a better phrase than the democratic 'control,' for operation is positive and functional, but control seems to imply restraint or hindrance. This democratic operation implies that the persons at work in an industrial service shall decide or determine the methods, or some of the methods, by which the service is organized." The author concludes that the functional responsibility of each class in making, selling and buying goods would then be felt as a moral responsibility in the wider social life, which would transform industrial relationships from the individual struggle of getting as much and giving as little as possible into a professional public service.

"The good sense of ordinary men can generally contrive to follow a course of action which by one act serves the self and by another the community, but by most acts serves both." Individual self development and the development of a fine communal life by individual service would proceed together and make industry a basic element in a genuine worthwhile civilized life. Industrial administration can not be legislated into a professional public service. But "in actual practice the administrators or organizers of industry must act as servants of the public. That is what is meant by the new moral standard which advocates professional honor as the ideal in industry."

The book has two Appendices: "The Group Mind in Trade Unionism" and "The Need for a Psychology of Business Men," reprinted from the *Journal of the National Institute of Industrial Psychology.*

Henry C. Metcalf.[1]

The Tragedy of Waste. By Stuart Chase, The Macmillan Company, New York, 1925, pages 269.

Mr. Chase's book is a sort of debater's manual, containing the affirmative side of the question: *Resolved,* that there is lots and lots of waste. Using newspaper items, magazine articles, official government reports and significant studies generally, the author has classified and compiled a large number of excerpts and interspersed them with running comment to bind them together.

An effort is made to evaluate the losses arising from wasteful habits and methods in consumption, advertising, production, industrial coordination, distribution and natural resources. The distinctive feature is an attempt to arrive at a sum total of the amount of waste, which is found to add up to an equivalent of well over 20,000,000 manpower a year. No special group of factors has been segregated for attack. An analysis of underlying causes is not attempted. Except for the expression of sympathy with what R. H. Tawney has called the functional society, there is not even the suggestion of a program of constructive solution or action to which this presentation is to be harnessed. Every kind of waste has been included, from crime to lack of city planning. The sole aim is to impress the reader with the ubiquity and aggregate vastness of waste.

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[1] Director, Bureau of Personnel Administration, New York.

For this particular purpose, the medium that Mr. Chase might have used is that of a painting in bold colors, stirring the emotion and the imagination; or an etching leading to more detailed examination and reflection. Instead, the general point of view of the book is that of an aeroplane photograph, with Mr. Chase's pencil moving from one square millimeter to another and he himself eagerly deluging the listener with citations of facts, comments and calculations.

This method has grave defects. It means that the reader is taken over a vast amount of ground which is thoroughly obvious and familiar. It means that the number of quotations is too large for the author to have been able to give each source of information that thorough, intensive, critical analysis which any statistical method of describing a situation demands. Mr. Chase's own super-guesses are, therefore, built, in part, on a foundation of statistical material that may originally have served a good propagandist purpose; they do not satisfy the student who had hoped for a really scientific study of the subject, such as the previous writings by the author had lead the present reviewer to expect.

Much of the material should have been omitted. One example is the ridiculous table by the Secretary of the Treasury, estimating the country's expenditures on luxuries (p. 86). Some of the guesses and superficial comments in fields in which the author was not thoroughly familiar are out of place and mar the reader's confidence. Such, for instance, are the *obiter dicta* with regard to the value of production engineers, cost accountants, statistical services and trade associations. Has Mr. Chase studied their work in sufficient detail to make such statements about them? Many of these have done splendid pioneer work in educating industry to eliminate the wastefulness of industrial practices. The reference to the wastefulness of overhead staff (p. 275), is also open to objection. Perhaps more careful analysis might have shown that none of the improvements in technique, whether in planning cities, in reducing crime, or in scientifically managing industry, is possible without an enormous increase in overhead staff. Research work and functionalizing thought and planning require engineers and executives at the top. This, of itself, would considerably decrease the ratio of productive to "non-productive" labor, although bringing higher efficiency. On the other hand, where is the conclusive evidence to prove the bland assertion that the labor movement is "combining its demand for more democracy in industry with the realization that only the lessening of waste can raise the standard of living?" (p. 278).

As a source book on evidence of what most sophisticated people already know, the book is a handy one to have around, and will aid the man who has a speech to make or a point to illustrate. We wish, however, that Mr. Chase had taken one small phase of his subject, such as advertising, food marketing, or even distribution in general, in which he has written the best sections, and done a detailed, technical study, made practical by an attempt to propose a program of improvement. As it is, the general impression is something like that of being lead through a plant by a factory guide, who tells one at every step the enormous number of tons of raw material required for that process, or the vast number of units made of that product, but adds little, if anything, to one's understanding of the principles by which the organization ought to function.

HERMAN FELDMAN[2]

Principles of Personal Selling. By Harry R. Tosdal, Ph.D. A. W. Shaw Company, Chicago, 1925, pages 753. Numerous forms and charts.

"Comprehensive" is probably the best word to apply to this book. It is characteristically thorough like all the presentations by Professor Tosdal. The book was written primarily for use in the class-room. But the general reader, whether executive or salesman, will find the pages profitable. One cannot think of many important aspects of selling left untouched. Yet, the treatment is vital, not sketchy.

Dr. Tosdal is not attracted solely to the usual type of facts regarding personal selling. Scholarship improves the practical benefits of the book. Personal selling is treated as a subject with a scientific basis. The discussion assumes a "selling process" and in another chapter makes bold to consider the present status of information as to the "psychology of the selling process." In the breadth of understanding of what present-day psychology has to offer, the book is unique. And in the effort to organize as well as harmonize the practical applications of psychology to selling, Dr. Tosdal is a pioneer in publication.

The "practical man" may assert that there is no science of selling. But such a man will not wish to acknowledge the advantage of directing warfare from the altitudes. To be sure science and art represent the extremes of thought to some. But there is a point where they fuse. If we hold in mind that art is applying knowledge, we see the necessity for knowledge. Obviously salesmanship is an art. But a "thinker" will not find satisfaction in a book on a salesmanship confined to "pep talks." The "doer" is a type common to selling, of course, but Dr. Tosdal assumes that salesmen and buyers respond "reasonably" and that there must be some common basis for such responses. Such a thesis represents a new epoch in literature on salesmanship. It is the purpose of this review to stress the need for and value of such pioneer viewpoints.

Economics and psychology have much in common. In fact, from one point of view it may be said one is cause and the other effect. Which is which is unimportant because intangible. The author's definition of salesmanship is a good example of the assumption of interrelation: "Salesmanship is the art exercised by the seller of effecting economic exchanges" (p. 4). That is, goods are not economic goods until human wants are correlatives.

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Little is gained by quarreling with the above definition. The reviewer believes it is too limited in scope and would phrase another definition, "Salesmanship is the ability to effect economic exchanges." But of the making of definitions there is no end, and little is gained where differentiations are slight. Some readers may think, however, that the author's emphasis of *art* rather than *ability* is less in line with other psychological points of view than is warranted. Too, the seller is not always the exerciser of the art. Often a buyer out-psychologizes the seller. Mere economic exchange is not salesmanship. So there must be aggressive effort. But if both seller and buyer exercise *art* could one say there was no salesmanship in the transaction?

The part of the book most appealing to the student of salesmanship is the presentation of the scientific basis: The other parts are stimulating, sensible, sound. They are the outgrowth of a wide range of experience with selling problems. But they are judgments after all and may or may not accord with the reader's. The science is tangible.

At the outset, may it not be considered a deficiency that the theory of the book gives no more prominent place to the Austrian school of economists than that of a footnote on page 74. Probably such an emphasis was editorially wise. But in fact the footnote should be a headline in one's thinking. Here is the fusing point of the social sciences of economics and psychology.

Again, does the author make clear his newer stress on the theory of *wants* in relation to the trite grouping of psychological processes? While it is trite, it is psychologically sound to assert that the selling process necessitates attention, interest, desire, action and satisfaction (p. 85). Just where does the theory of *wants* as a *sine qua non* diminish the need for the old five-fold classification or series of steps? Dare one inquire as to the consistency of the five-fold classification with Watsonian "behaviorism" to which the book seems to attach itself?

But what a delight it is to see the names of leading psychologists in the footnotes, to enjoy the sincerity of a serious attempt to present the *subject* of salesmanship and to comprehend the compliment such a book pays to the field of human endeavor in which so many thousands earn their daily bread.

GLENN N. MERRY[3]

The Investigation of Business Problems: Technique and Procedure. By J. Eigelberner, A. W. Shaw Company, Chicago, 1926, pages xi, 335.

In making an appraisal of this book, it would not be possible for one to improve on the phraseology with which the author has expressed his purpose in the preface. He presents two distinct reasons for writing the book. "First the fundamental intent to present a thorough analysis of the subject, sound both from a standpoint of theory and practice. But back of the foregoing, and assuming primary importance at all times, is the purpose of developing a practical training in the art of investigation which will be of equal value to the business executive and to the research worker, both in the analysis and the solution of their problems." This purpose has been accomplished.

Any piece of industrial research necessitates breaking up things into their component parts as a foundation for any future work. In the preparation of his book Mr. Eigelberner has carried out the same procedure that he recommends for others in arriving at the solution of an industrial problem. To the student in school or to the man young in experience the book should be particularly helpful because in many parts it is essentially elementary. It may inspire the man older in years and in experience to analyze his conscious and subconscious efforts and furnish him a worthwhile audit of his technique.

S. M. WOODWARD[4]

The Integration of Industrial Operation. By Willard L. Thorp. Census Monograph III, Washington, D. C., 1924.

The subtitle of the volume gives an accurate statement of its purpose and scope: a statistical and descriptive analysis of the development and growth of industrial establishments and of the size, scope, and structure of combinations of industrial establishments operated from central offices. As the readers of this journal probably know, the Census Office began, with the census of 1919-20, to issue special monographs dealing with particular topics and inquiries concerning the census data published in the usual form. This monograph by Dr. Thorp is a pioneer attempt to disclose the trends in industrial organization in the United States.

Within the limits of this notice it is not possible to enter into any detailed discussion of the subject treated by Dr. Thorp. One must be content with a brief statement of the materials he has presented and a word or two about their general significance and particular interest to members of the Society.

The discussion falls into three divisions. The first is concerned with the growth of industrial establishments, with reference to the changing size and scale of operations and the differences in character of ownership. The second section is an attempt to elicit from the census schedules specific data upon the extent of centralized operation of industries, wherein the actual operations (as distinct from financial control, etc.) are combined under one management. The third section is a detailed examination of the types of central office management to be found in the several industries, with particular reference to the purpose served by the central office control, or integration under one management of several industries or stages of industrial operations. Here we find specific data upon the combination of industrial operations of uniform products, joint products, by-products, dissimilar products of similar processes, complementary, auxiliary, successive, and unrelated products.

The significance of industrial integration is to be seen in the extension of the method of planning and control to the direction of two or more industries, wherein the technical relations arising from their operations and products are

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